Network Video Recorder

User Manual

(updated September 15, 2014)

Information in this document is subject to change without notice.
© Copyright 2006-2014, Exacq Technologies, Inc. All rights reserved.

Exacq Technologies is a trademark of Exacq Technologies, Inc. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Exacq Technologies, Inc., disclaims any proprietary interest in trademarks and trade names other than its own.

Exacq Technologies makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Exacq Technologies shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.

Exacq Technologies, Inc.
11955 Exit Five Parkway, Bldg 3
Fishers, IN 46037 USA

exacqVision

TABLE OF CONTENTS

1 System Installation Checklist 5

2 Installing exacqVision Software on Third-Party Clients and Servers 8

Server Requirements 8
Networking 8
Web Server 9
Server Software Installation 9
Client Software Installation 9

3 exacqVision Software Overview 10

Client/Server Architecture 10
Logging In 11
Updating exacqVision Client Software 12
Main Pages 13
exacqVision Help 14

4 Config (Setup) Page Overview 15

Add Systems 16
System 17
Add IP Cameras 22
IP Camera Recording 24
Analog Camera Recording 25
Camera Settings 26
Display Tab 28
Video Tab 29
Recording Tab 32
Motion Tab 33
Mechanical PTZ Tab 34
Digital PTZ/Fisheye Tab 36
Schedule Tab 37
Serial Profiles 38
Serial Ports 42
Audio Inputs 44
Trigger Inputs 45
Alarm Outputs 46
Video Output 47
Storage 48
Event Linking 54
Schedule 55
Users 57
Systems 58
Device 60
Client 61
Views 63
Tours 64

Layouts ... 65
System Information ... 66

5 Live Page Overview ... 67
Layout Panel ... 68
PTZ Control ... 70
exacqReplay ... 72
Camera Views ... 74

6 Search Page Overview ... 76
Searching for Video and Other Data ... 78
Video Playback ... 80
Searching Views ... 82
Search Serial ... 83
Exporting Files ... 84

A Technical Support ... 87

B Regulatory Notice ... 88

C Warranty ... 89

D Manual Updates ... 90
Release 5.0 ... 90
Release 5.2 ... 90
Release 5.4 ... 90
Release 5.6 ... 90
Release 5.8 ... 90
Release 6.0 ... 90
Release 6.2 ... 90
Release 6.4 ... 91

1 System Installation Checklist

	Quick Start
	Installation ☐ See the server's Quick Start Guide for information on installing the hardware.
	Establishing Initial Communications ☐ See the server's Quick Start Guide for information on establishing initial communications from the client software to an exacqVision Server.
	Configure IP Cameras ☐ See the IP Camera Quick Start Guide for information on configuring the camera IP addresses, usernames, and passwords. This document can be found at http://www.exacq.com/support/specsheets.html.
	Config (Setup) Page (see Chapter 4)
	System* ☐ Set exacqVision server for static IP address. ☐ Configure the system name, time, and time zone.
	Storage ☐ Ensure all disks are selected for recording except the system drive ("C:\" in Windows or "/mnt/edvr/0" in Linux) ☐ Ensure total disk space matches the expected value.
	Add IP Cameras ☐ Add IP cameras to the exacqVision servers.
	Camera Recording (IP cameras) ☐ Set resolutions[1]. ☐ Set frame rate[1].
	Camera Recording (analog cameras) ☐ Set resolutions[1]. ☐ Set frame rates[1]. ☐ Disable cameras that are not connected.
	Serial Port ☐ Set up serial port for RS-485 mechanical PTZ control. ☐ Set up serial port for input from serial devices.

	Camera Settings ☐ Name camera. ☐ Enable onscreen display. ☐ Set motion mask on IP cameras (there are generally no motion windows set on a new camera). The default motion recording schedule won't trigger recording. ☐ Mask motion from irrelevant objects such as moving trees. ☐ Create windows in relevant locations, such as doors and hallways. ☐ Configure quality just high enough to see relevant details[1]. ☐ If supported by the cameras, set recording format to MPEG4 or H.264 instead of JPEG for better storage. ☐ Watch for blue border around live video window on setup page when motion is occurring to ensure that motion sensitivity and masking are appropriately configured. ☐ Configure mechanical PTZ presets.
	Schedule ☐ Motion is recorded by default. Change any cameras to continuously record or stop recording as needed. ☐ Audio is not recorded by default. Schedule audio recording if necessary.
	Users ☐ Add user accounts for the people who will use the system.
	Trigger Input ☐ Name input triggers to be used. ☐ Set radio button to normally open or closed to match physical switch.
	Alarm Output ☐ Name any alarm outputs to be used.
	Event Linking ☐ Create events to alert administrator via email of system health issues. ☐ Create events to record video on input triggers. ☐ Create events to email security administrator upon unexpected triggers or motion. ☐ Create event to email installer when license subscription is near expiration.
	Export Settings ☐ Save settings and license to a USB flash drive to aid the recovery process, if necessary.

	Live Page (see Chapter 5)
	Live ☐ Create views as required by users for live viewing or multi-camera search and playback.
	Install Client ☐ Install the exacqVision Client on another computer and ensure that it can connect to the exacqVision Server using the static IP address and one of the configured user accounts.
	Search Page (see Chapter 6)
	Search* ☐ Connect after 24 hours. ☐ Connect after 7 days. *Search to ensure cameras are not recording excessive amounts of motion; if they are, adjust motion sensitivity or windows/masks, or possibly adjust camera for low-light noise. Look at Storage page and extrapolate the storage duration to ensure that it meets requirements; if it does not, decrease frame rate, quality, or resolution.

2 Installing exacqVision Software on Third-Party Clients and Servers

Server Requirements

Hardware Requirements

See the Exacq website at https://www.exacq.com/products/vms_requirements.html for current minimum hardware requirements. Actual hardware requirements vary considerably based on each user's application:

- CPU requirements increase greatly when hosting multiple concurrent web clients.
- The exacqVision server application requires a maximum of 4GB, although additional memory is required for the operating system, web hosting, or any other server applications.
- The storage system is often the performance limitation because of the large amount of read and write processes. Your storage system should be capable of sustained reads/writes at least twice the maximum data rate from all cameras. Exacq highly recommends using RAID 5 or RAID 6 for all video storage to reduce the likelihood of catastrophic failure.
- Enterprise-grade hard drives are highly recommended to handle constant video recording.
- The server operating system and exacqVision software should be installed on a dedicated, mirrored operating system drive.
- Servers should always be UPS-powered to avoid data corruption during power failure.

Operating System Requirements

See the Exacq website for minimum operating system requirements. In addition:

- If automatic updating is enabled, your server might stop recording video when the operating-system restarts.
- Anti-virus programs should scan *only the operating system and exacqVision software drives*. Virus scanning should be disabled on all video storage drives to avoid large decreases in drive performance.
- Port blocking is not recommended because many edge devices use multiple or dynamic port assignment.

MAC addressing requirements

exacqVision software is licensed based on MAC addressing. Servers with teamed NICs or other arrangements that obscure the MAC require an additional USB-based NIC to provide a licensing MAC.

Networking

For the greatest system reliability and performance, the network administrator should observe the following best practices:

- A dedicated VLAN and NIC port for all cameras.
- A dedicated VLAN and NIC port for storage networks (if used).
- A separate VLAN and NIC for all client connections.
- Cameras and servers should use fixed IP addresses. Clients can use DHCP.
- Camera-to-server network capacity should be twice to maximum video data rate.
- Server-to-thick-client network capacity should be 1.5 times the maximum total data rate of all simultaneously viewed cameras.

Web Server

The exacqVision Web Services installer provides lighttpd as the default web service. For systems where more than five to ten concurrent client connections are expected, you should upgrade to Apache web services. For more information, see https://www.exacq.com/kb/?kbid=34927.

As noted previously, web services increase server hardware requirements and can require installation on a dedicated web server. For additional information on configuring web services, see the Exacq knowledge base at https://www.exacq.com/kb/.

Server Software Installation

1. For Windows servers, download the latest server and web services software installation from http://downloads.exacq.com/reseller/exacqVision.exe
2. For Linux servers, download the latest server and web services software installation from http://downloads.exacq.com/reseller/Ubuntu/Dapper/exacqVisionServer.deb.
3. Using an administrator account, run the executable to start the installation wizard.
4. Configure the IP address, username, and password on all cameras by following the manufacturer's instructions or the *exacqVision IP Camera Quickstart Guide* found at https://www.exacq.com/downloads/ev-ip-quickstart-0311.pdf.
5. Test connectivity to each camera with the ping command.

Client Software Installation

1. Download the latest client software from https://downloads.exacq.com/downloads/exacqVisionClient.exe.
2. Using an administrator account, run the executable to start the installation wizard.
3. Confirm connectivity with the server using the ping command and server IP address. If the client PC cannot communicate with the server, contact the network administrator.
4. Start the exacqVision Client software and enter the configuration page.
5. In the site tree, select Add Systems.
6. Click New and enter the username admin, password admin256, and IP address (static) or hostname (fixed) that was configured in previous steps. Click Apply. If the new server appears in the system list table with a status of Connected, the initial server configuration is complete. If the server does NOT connect, but server connectivity was confirmed in previous steps, ensure that the PC anti-virus software is not blocking communications with the server IP addresses and ports.
7. Proceed to Chapter 4 to start exacqVision server configuration.

3 exacqVision Software Overview

Client/Server Architecture

exacqVision software is based on a client/server architecture in which every computer is a client, server, or client/server combination. These configurations are defined as follows:

- A client computer provides access to a remote service on another computer over a TCP/IP network. The exacqVision Client software is a thick client, and the web browser is a thin client.
- A server computer provides services to client computers over the TCP/IP network. An exacqVision server receives and stores video from cameras; provides audio, video, and data as requested by thick clients; and hosts a web server (if enabled) for thin clients. The exacqVision Server software does not have a graphical user interface; only the client software allows interaction. A server can serve multiple simultaneous client connections, within hardware limitations.
- A client/server combination simultaneously operates client and server software. A loopback TCP/IP address of "localhost" (127.0.0.1) allows the client software to communicate with the server software on the same computer. exacqVision servers are configured at the factory as a client/server combination to provide a convenient initial configuration experience.

Logging In

All exacqVision servers are shipped with two operating system accounts:

1. Username: **admin**
   Password: admin256
   Privileges: computer administrator

2. Username: **user**
   Password: user5710
   Privileges: restricted user

NOTE: Exacq recommends that the default passwords be changed by the operator and written and secured to prevent unauthorized access or modifications to the system. As part of the initial exacqVision System configuration, Exacq recommends that the operator configure a new user on the exacqVision Server with restricted privileges and change the exacqVision Client settings in the user operating system account to connect to the local exacqVision Server via this user. See the Users section of this manual or the context-sensitive online help file for instructions on creating a new exacqVision user.

When exacqVision servers start, they immediately start the exacqVision service, boot into the user account, and start the exacqVision Client software. Server log-in is not required to start video recording or communication with client PCs. All third-party servers start the exacqVision service on startup, but user accounts and automatic login must be manually configured.

The user account functionality is limited to using the exacqVision client software for maximum reliability. All server maintenance tasks (such as shutting down the exacqVision service) that are not performed within the exacqVision Client require logging into the operating system's administrator account.

Each operating system user account maintains separate settings for its exacqVision Client. These settings include usernames, passwords, and network addresses required for exacqVision Clients to access exacqVision Servers. By default, both the **user** and **admin** operating system accounts have settings that provide administrator access to the instance of exacqVision Server running on the local computer, which is always via the **localhost** (127.0.0.1) IP address.

Exacq recommends that all servers be configured with one system administrator account with Remote Desktop (Windows) or SSH (Linux) remote access for system support.

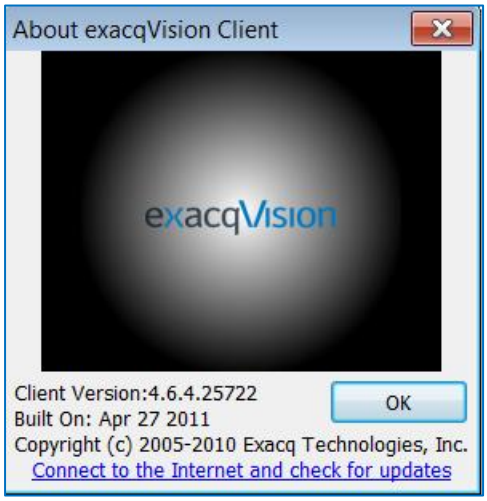
The exacqVision Server can be accessed from multiple exacqVision Clients, which can be running from the same computer as exacqVision Server or from remotely networked computers. The exacqVision Server has been preconfigured with one user.

Updating exacqVision Client Software

Click the exacqVision logo in the upper-right corner of the page to open the About exacqVision Client window.

1. The window lists the current version and built date.
2. To check for software updates, click Connect to the Internet and Check for Updates. If you have already installed the most recent version of the software, a message is displayed; click OK to return to the About exacqVision Client window. If a more recent version of the exacqVision Client is available, the download process starts.

After the download is complete, close all instances of the exacqVision Client to complete the update. Click Yes to accept the download, and then follow the instructions in the Setup Wizard onscreen.



Main Pages

exacqVision systems have three main operating pages, as represented by the following three icons:

Live Page allows users the ability to view live video.

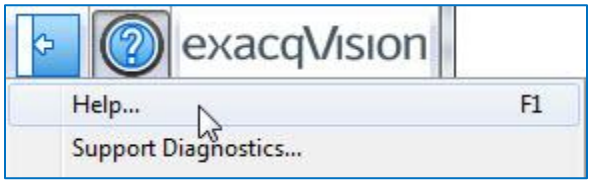
Search Page allows users the ability to search for recorded video.

Config (Setup) Page allows Administrators and Power Users the ability to configure systems.

Clicking on any of these icons changes the mode of operation. Each mode is explained in the following chapters.

exacqVision Help

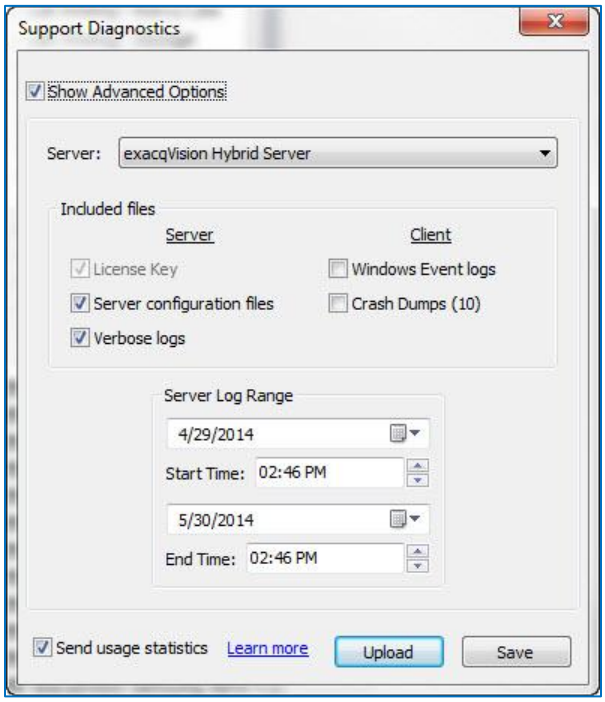
You can access online help and additional information about your exacqVision System by clicking the Help button or the F1 key. On some platforms, online help is context-sensitive. To view online help, click the question mark button and select Help from the pop-up menu. You can also view online help by pressing the F1 key on your keyboard.



The Help menu also can also be used to open the Support Diagnostics window, which allows you to compile log files for a server and send them to Exacq Technical Support. Select a server, the log files to send, and the date/time range of the log information. When you are finished, click Save to compile the logs so that you can send them to technical support.

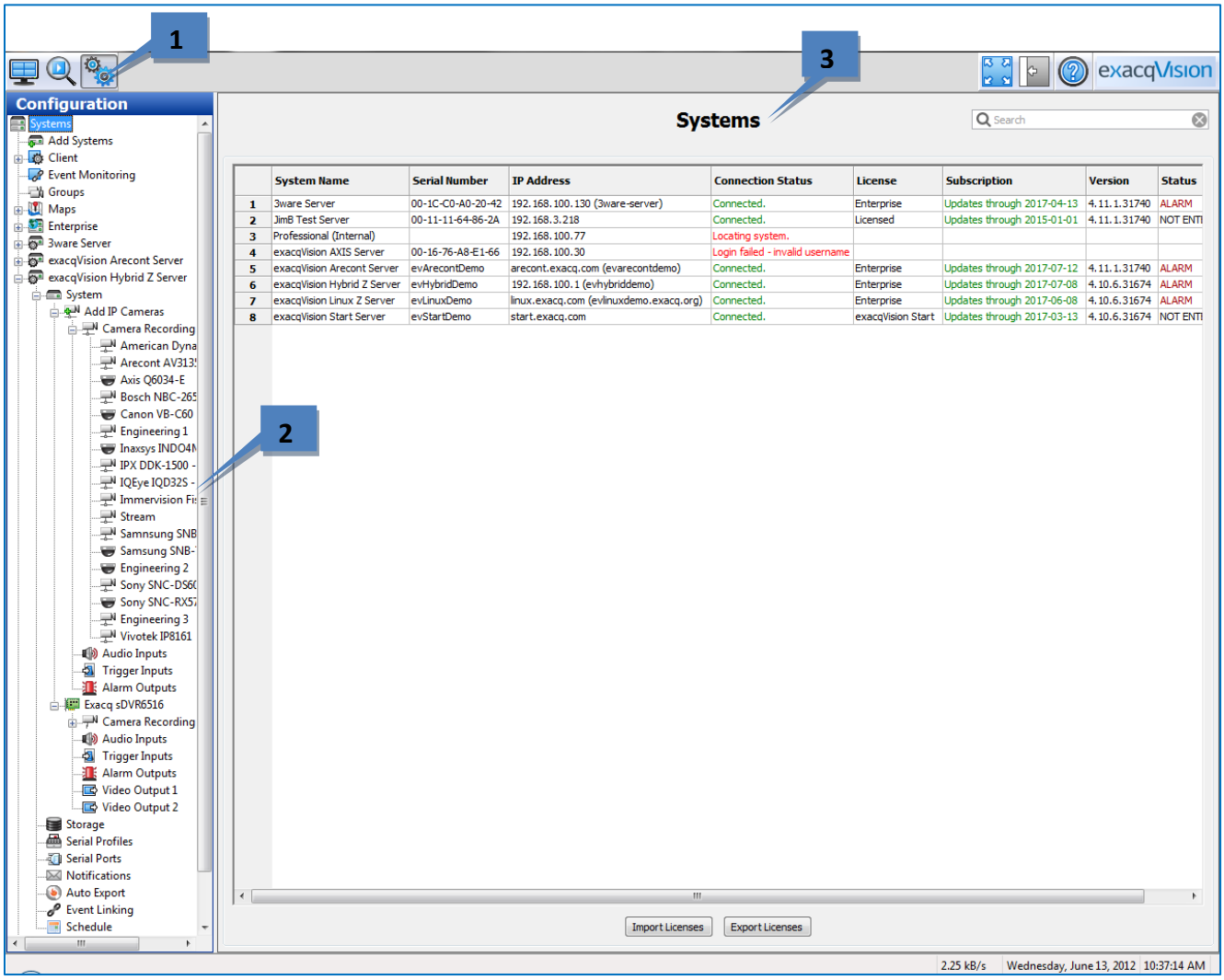
Alternatively, you can click Upload to open a Support Request Form that includes the compiled log files as an attachment. Enter all the requested information on the form and verify that the log files were attached at the bottom. When finished, click Submit Email Form.

NOTE: The Send Usage Statistics option on the Support Diagnostics page provides anonymous and non-sensitive information to the manufacturer about how cameras and exacqVision features are used on the system.



The Help menu also contains Internet links to new product information, technical support and knowledge base resources, and subscription and registration information.

4 Config (Setup) Page Overview

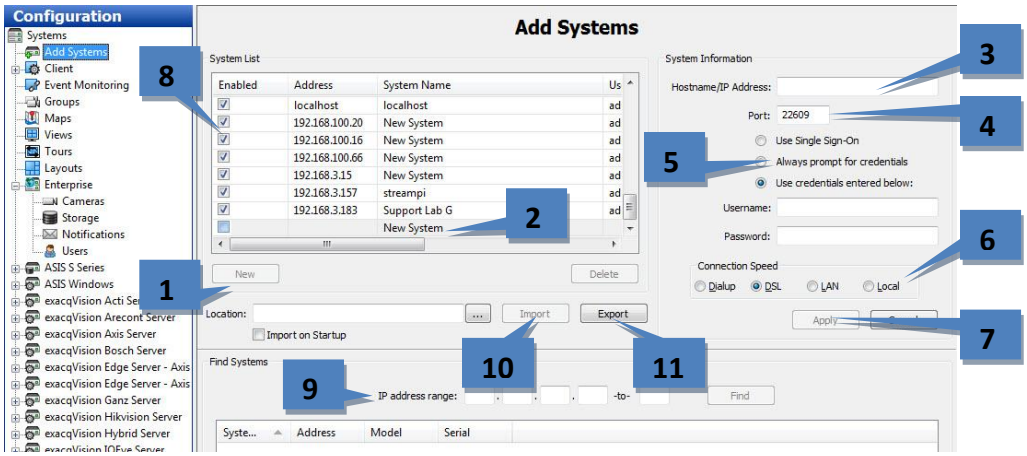


The Config (Setup) Page allows you to configure systems, cameras, and other devices.

1. **Config (Setup) Page Icon.** This button opens the Config (Setup) Page.
2. **Configuration Tree.** This tree allows you to open the various configuration pages for each connected system. Each of the pages are described in detail in the following sections.
3. **Systems.** This default Config page displays systems that have been added.

NOTE: Connected S-Series storage servers are also listed in the tree, but only those configuration pages applicable to storage are available for each server. The options on each S-Series configuration page are also restricted as needed.

Add Systems



The Add Systems page allows you to add systems so that you can connect to them with exacqVision Client.

1. To add a system, click New. (Alternatively, you can "find" a system, as discussed below.)
2. The new system is added to the System List. The System Information fields are enabled.
3. Enter the system's hostname or IP address. Contact the system administrator for details.
4. By default, the port number is 22609; change this only if necessary for your network configuration.
5. Select one of the following login methods:

    - Use Single Sign-On is available only on systems with an Enterprise license. See the "Enterprise Users" section of this manual for more information.
    - To require a username and password entry every time exacqVision Client is started, select Always Prompt for Credentials.
    - To automatically log in to the system every time exacqVision Client is started, select Use Credentials Entered Below. Then enter a valid Username, Password, and Password Confirm.

6. Select a Connection Speed. This tells the system how much audio to buffer in order to help maintain a smooth audio stream.
7. When finished, click Apply. If the entered information is valid, the system is automatically connected.
8. To disconnect or reconnect a system, select its box in the System List.
9. To find a system and its address on your network, enter the IP address range in the Find Systems area. The first three boxes must be the first three elements of the IP address; the fourth and fifth boxes are used to create a range of numbers for the final element of the IP address. Click Find to list all systems whose IP addresses are in the IP address range. When the search is complete (or when you click Stop, which replaces the Find button), select any of the systems to add the system to the System List and populate the Hostname/IP Address field. You must still enter a valid username or password to be able to connect to the system. Click Apply when finished.
10. Enter a network location or web site where a server configuration file is located and click Import to load the list to the client computer. (This will not delete any systems already added.) Select Import on Startup to automatically load the list whenever exacqVision Client is started.
11. Click Export to save the server configuration file for import on another system.

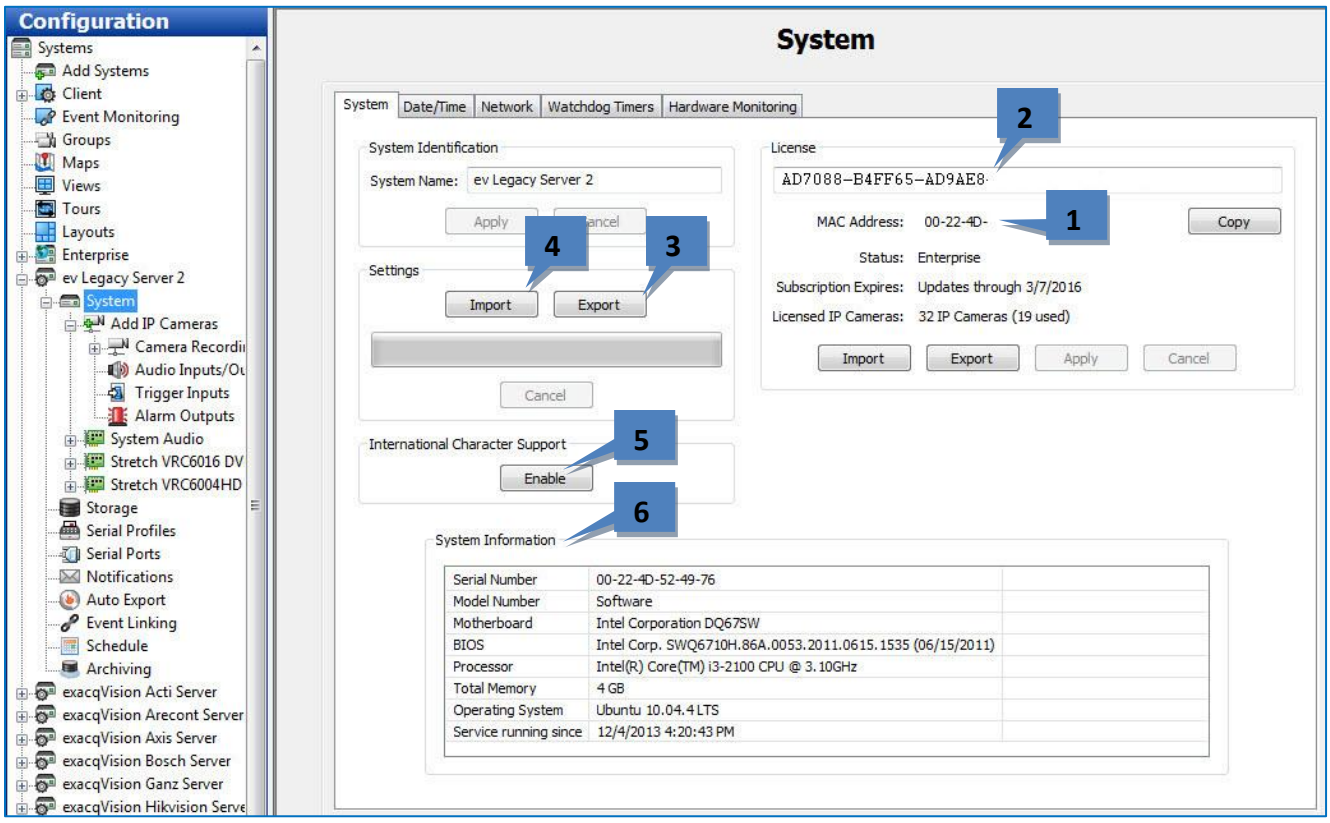
Connected systems in the System List also appear in the Configuration, Live, and Search trees. Disconnected systems do not appear in the trees.

NOTE: You cannot connect to more than one system that is licensed as an exacqVision Start server at a time. If you attempt to connect to a second Start server simultaneously, the first connection to a Start server is terminated.

System

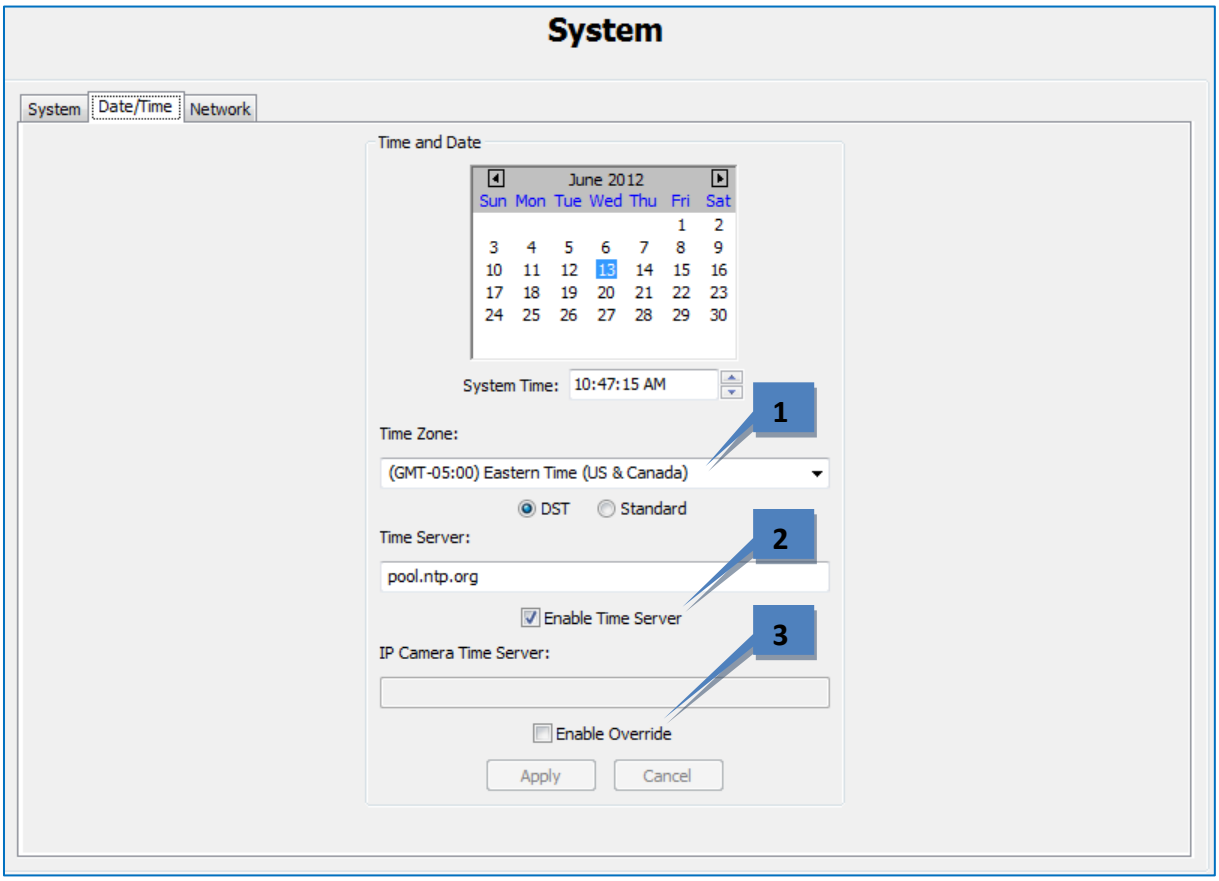
The **System** page allows you to set basic system parameters for the client application. The page is separated into the following tabs:

- The **System** tab allows you to create a name for the system, export and import settings from other systems, import and export graphics, and manage the licensing of your system.



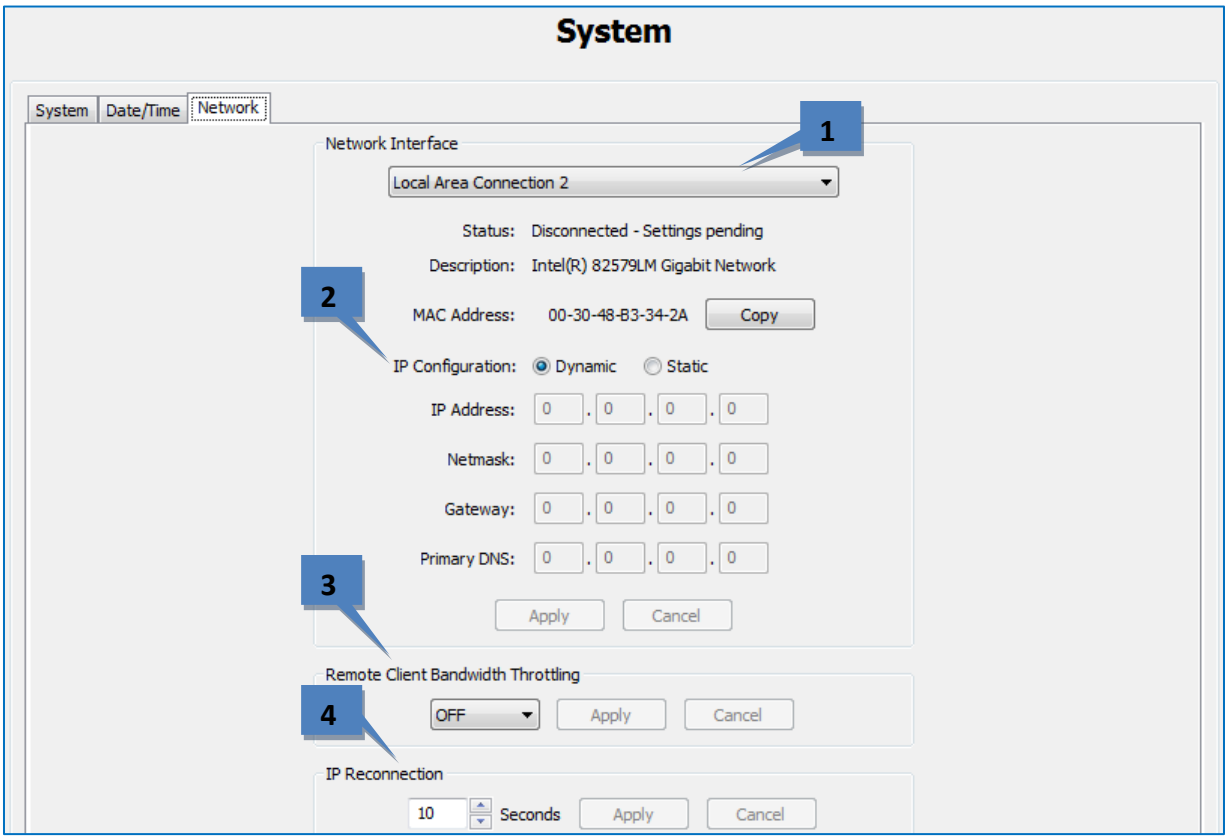
1. The MAC Address of the system's primary network adaptor is used to generate a license key. To obtain a license key online, provide the system MAC address to your dealer. Unlicensed exacqVision servers can connect to only one IP device at a time.
2. After the dealer obtains a license key from Exacq, enter the key in this box.
3. After configuring your system, it is recommended that you click Export Settings to export system settings to a USB or network drive and store it off-site for recovery from a disaster or malfunction.
4. If you ever need to restore the settings or simply import them from another system, click Import Settings and apply the saved settings.
5. For proper encoding of certain international characters and symbols, click Enable. This feature allows exacqVision to correctly display international characters in all entered information, such as camera and server names. Carefully read the pop-up message before confirming. **This action cannot be reversed on the server, and it could cause international characters to be displayed incorrectly on previous versions of exacqVision Client.**
6. System information provides basic information about the system hardware.

- The **Date/Time** tab displays the exacqVision server's time information.



1. Select the time zone and daylight saving time (DST) information for the server's location.
2. On systems with Internet access, select Enable Time Server and enter a valid Internet time server. On systems without Internet access, select Enable Time Server and enter an internal time server (see your network administrator for more information).
3. If the IP cameras on the network need to synchronize with a time server other than the exacqVision server, select Enable Override and enter the server address.

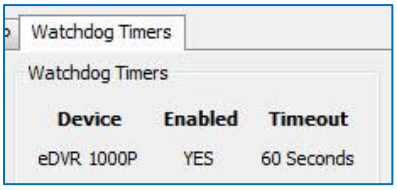
- The **Network** tab displays your system's IP Address, Netmask, Gateway, and Primary DNS server.



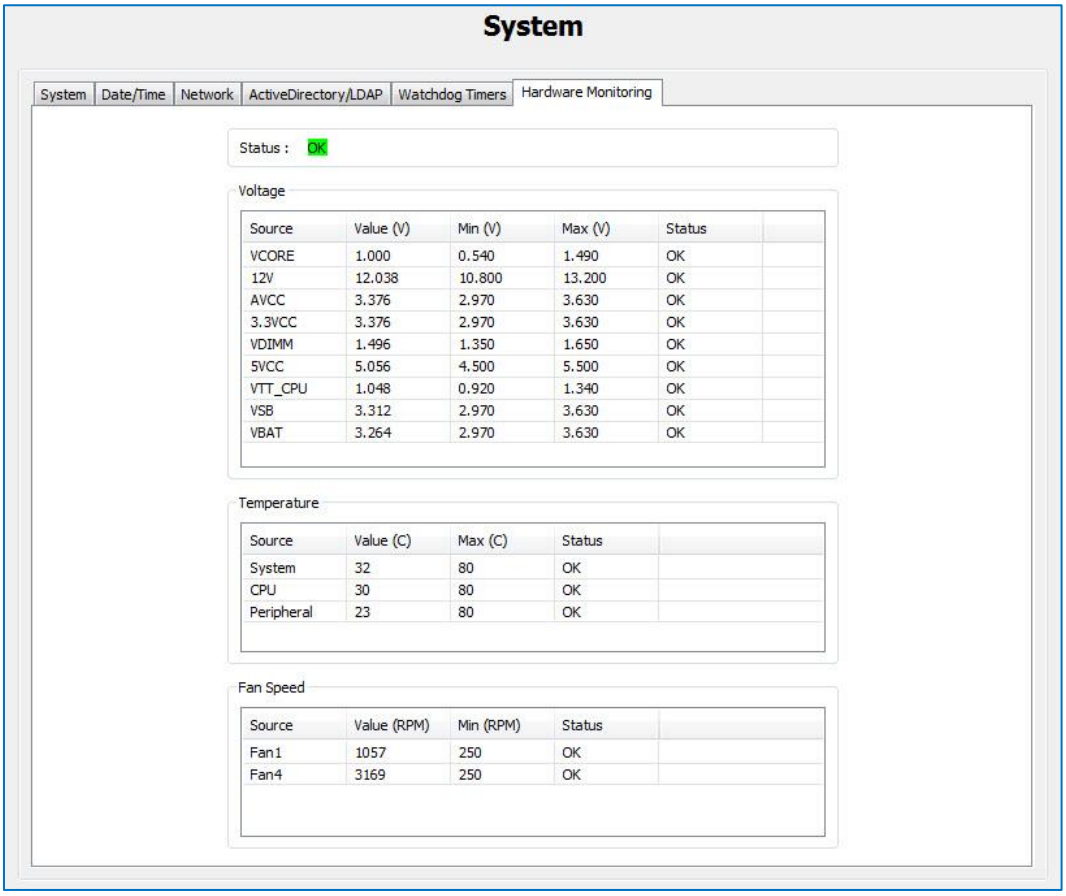
NOTE: On a Linux-based system with multiple network interface cards (NICs), the DNS server is the same for all the NICs in the system. Therefore, changing the DNS on a single NIC changes the DNS for all the NICs in the system.

1. Select a network connection from the Network Interface Settings drop-down list to display its information. Systems with multiple NICs have more than one entry in the list.
2. Enter the IP Configuration information for the network connection. Gateway and Primary DNS information is required to connect with a network time server. Click Apply.
3. Select the correct bandwidth setting to limit network traffic from the server to client computers and iSCSI drives, and click Apply. **NOTE:** This setting applies to outbound traffic from all NICs in the system.
4. Select the IP Reconnection Settings value in seconds. Click Apply.

- The **Watchdog Timer** tab displays information about the system's factory-installed watchdogs, if available. The watchdogs can restart systems or capture cards if they lock up. The information on the tab is not configurable.



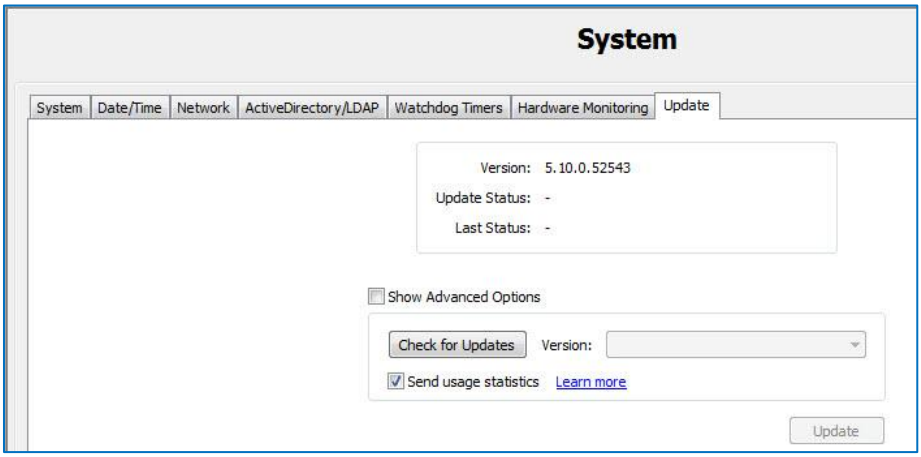
- The **Hardware Monitoring** tab (available only on certain systems) displays information about the system voltage, temperature, and fan speed. The Status message changes to a red ALARM if a minimum or maximum value of a monitored parameter is reached.



- The **Update** tab allows you to remotely update the exacqVision Server software. The server's current exacqVision Server version is listed at the top of the tab. Click Check for Updates; if a newer exacqVision Server release is available, it will be listed in the Version drop-down list.

  After you select an exacqVision Server release, click Update. Update Status tracks the progress of the update. After your first update, the Last Status will provide information about the most recent update.

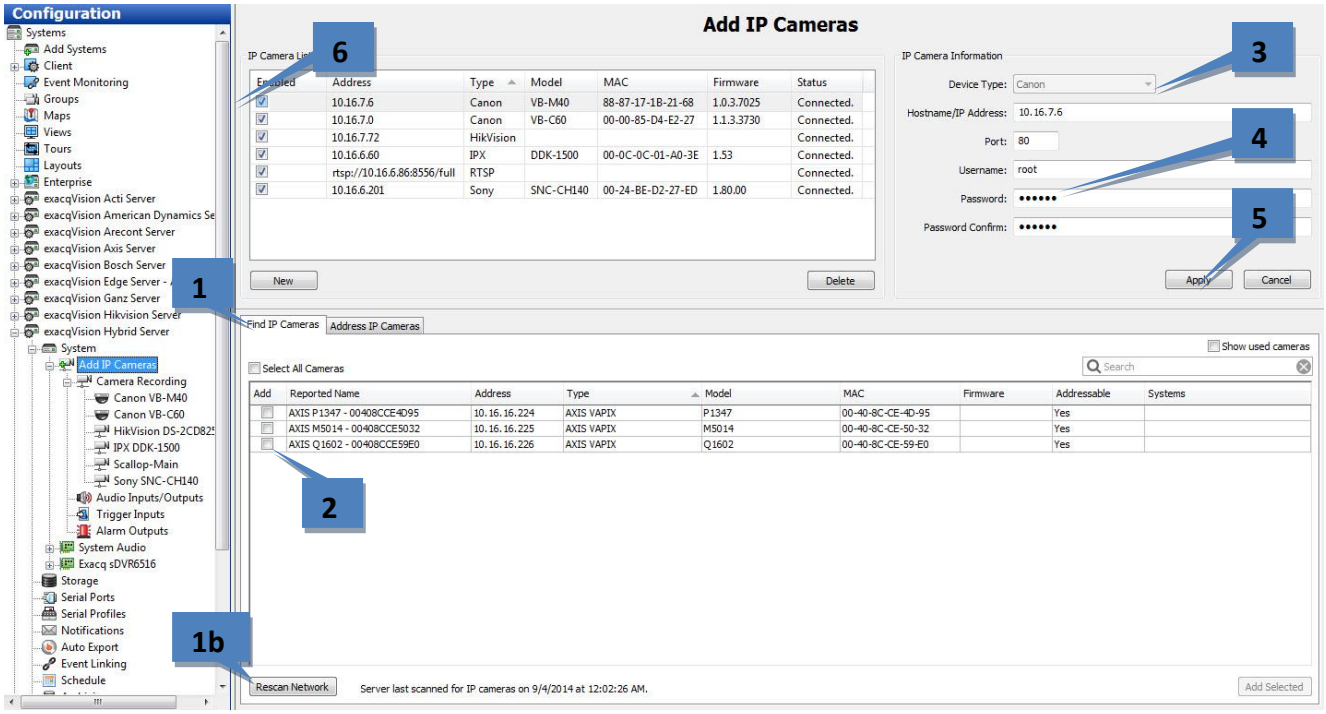
  NOTE: Alternatively, you can select Show Advanced Options to open the Location field, which contains a network share location accessible by the client and server. Copy the update list and all server software updates to the location specified.



Please note the following additional information about remote updates:

- **The exacqVision system will stop recording for several minutes during the update**, and then it will automatically begin recording when the update is complete.
- Available exacqVision Server releases can vary based on the system's license and subscription status.
- Remote updates on the System page require the exacqVision Server and exacqVision Client both to be connected to the Internet.
- If the server and client are not connected to the Internet, you can copy your license file to a flash drive or other portable media device. Then upload the license file to the Offline Software Update Packaging Utility on exacq.com under Support and Downloads.
- Send Usage Statistics provides anonymous and non-sensitive information to the manufacturer about how cameras and exacqVision features are used on the system.

Add IP Cameras



The **IP Cameras** page allows you to add IP cameras and devices to the system and configure their settings. The following features are available on the IP Cameras page:

1. The Find IP Cameras tab scans for supported IP cameras available on the same network that the system is connected to. If you don't see an IP camera that you expect to see on the network, verify that the camera has been configured as instructed in the *exacqVision IP Camera Quickstart Guide* and that the camera can be pinged from a command prompt. If you make any changes to an IP camera, click Rescan Network (1b) and check whether it is listed.

   NOTES: To confirm which camera you are installing, right-click the camera in the IP Camera List or Find IP Cameras list to access the camera's website and view a video image. Also, if you want to quickly assign IP addresses to cameras listed as Addressable, see the Address IP Cameras tab discussion on the following page.

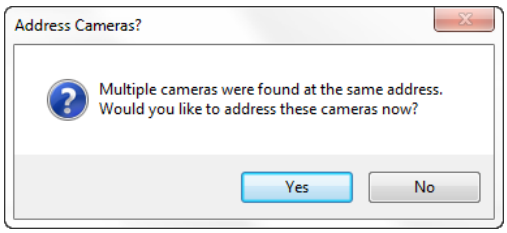
2. Select a camera in the Find IP Cameras list to add it to the IP Camera List.
3. Alternatively, you can manually add a camera by clicking New and selecting the device type as follows:

   - If the appropriate manufacturer-specific driver is shown in the list, select it.
   - If that is not available and the device is ONVIF-compliant, select the ONVIF driver. (The level of integration can vary by manufacturer or model.)
   - RTSP-compliant cameras can stream video but not motion detection or camera configuration data.

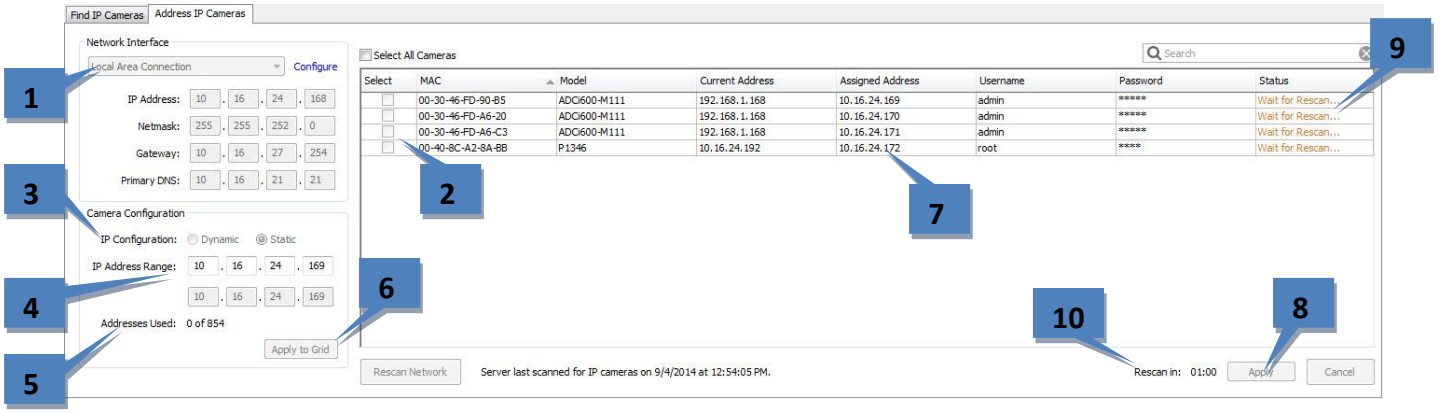
4. Enter a username, password, and IP address as configured on the camera.
5. Click Apply to save the camera configuration.
6. To enable a camera, select its checkbox in the IP Camera List. The number of cameras you can enable is subject to licensing limits.

The camera should now also be listed in the Configuration, Live, and Search trees.

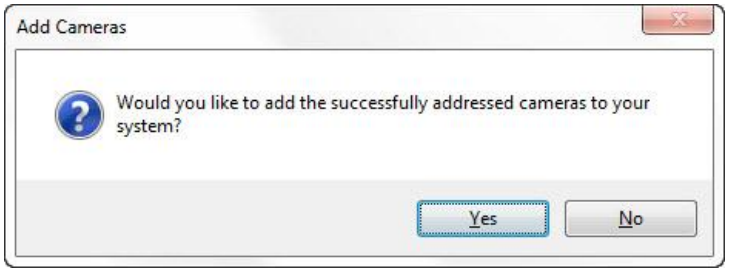
Certain camera models from certain manufacturers can be listed as Addressable on the Find IP Cameras tab. This allows you to select the **Address IP Cameras** tab and change the IP address of those cameras. Or, if multiple cameras on the Find IP Cameras tab have the same IP address, you might also see the following message:



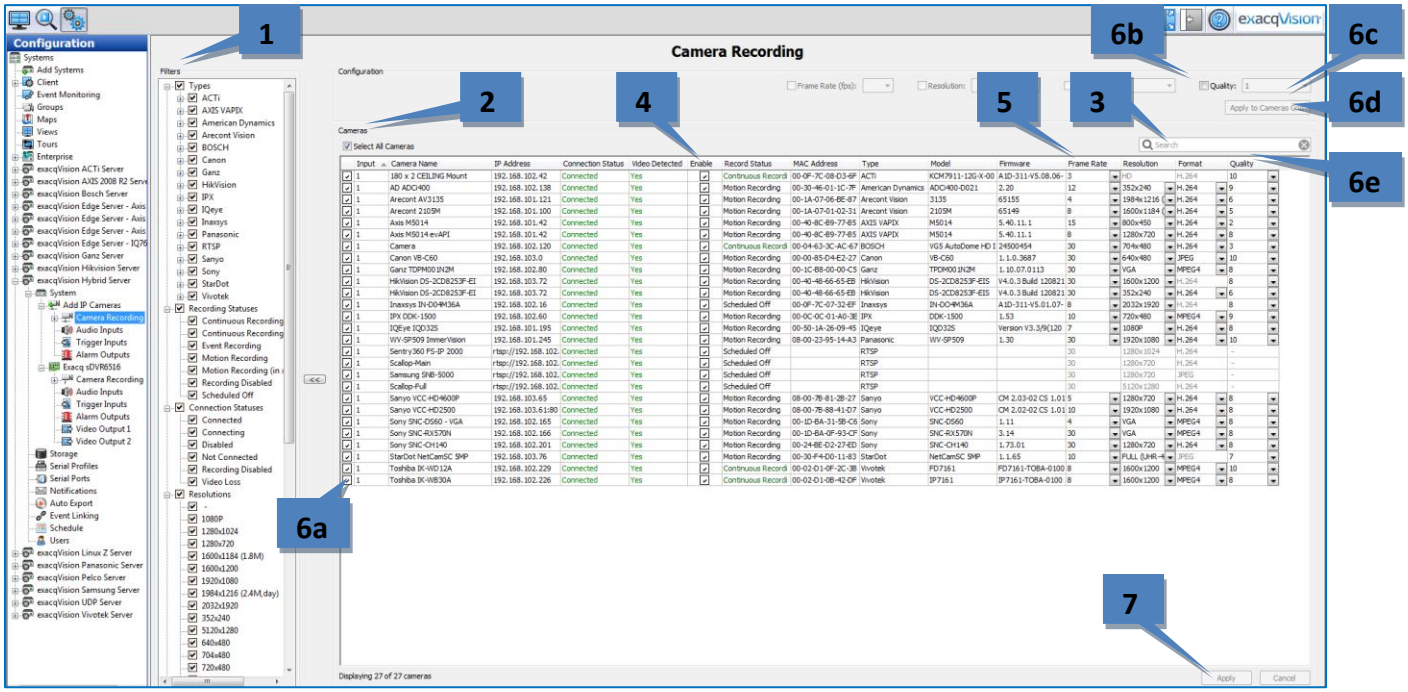
Click Yes to open the Address IP Cameras tab:


Find IP Cameras
Address IP Cameras
Network Interface
Local Area Connection
Configure
IP Address: 10 . 16 . 24 . 168
Netmask: 255 . 255 . 252 . 0
Gateway: 10 . 16 . 27 . 254
Primary DNS: 10 . 16 . 21 . 21
Camera Configuration
IP Configuration: Dynamic Static
IP Address Range: 10 . 16 . 24 . 169
10 . 16 . 24 . 169
Addresses Used: 0 of 854
Apply to Grid
Select All Cameras
Search
Select MAC Model Current Address Assigned Address Username Password Status
00-30-46-FD-90-B5 ADCi600-M111 192.168.1.168 10.16.24.169 admin ***** Wait for Rescan...
00-30-46-FD-A6-20 ADCi600-M111 192.168.1.168 10.16.24.170 admin ***** Wait for Rescan...
00-30-46-FD-A6-C3 ADCi600-M111 192.168.1.168 10.16.24.171 admin ***** Wait for Rescan...
00-40-8C-A2-8A-BB P1346 10.16.24.192 10.16.24.172 root **** Wait for Rescan...
Rescan Network
Server last scanned for IP cameras on 9/4/2014 at 12:54:05 PM.
Rescan in: 01:00
Apply
Cancel
1
2
3
4
5
6
7
8
9
10

1. On systems with more than one network interface card (NIC), you might need to select a different NIC from the drop-down list to see the cameras that you want to address. You can click Configure to open the Network tab on the System page to view or modify the NIC's configuration.
2. Select the checkboxes for the cameras that you want to address (or Select All Cameras).
3. Select Dynamic (DHCP) or Static for the IP Configuration.
4. If you selected Static, modify the IP Address Range as needed.
5. If you selected Static, the Addresses Used item shows the number of cameras selected in the list and the number of addresses available based on the entered IP address and Netmask. If any of those addresses are already used by other devices, the number of such addresses are shown as "skipped." The first number cannot be larger than the second number.
6. Click Apply to Grid.
7. The Assigned Address column displays the new IP address (if Static was selected) or Dynamic.
8. Click Apply.
9. The Status column displays the progress of the addressing. Assigning a new address normally forces a restart of the camera; thus, the system automatically rescans for the cameras after one minute.
10. The timer indicates when the automatic rescan will occur.
11. If the addressing was successful, a message box allows you to add the cameras to the IP Camera List:



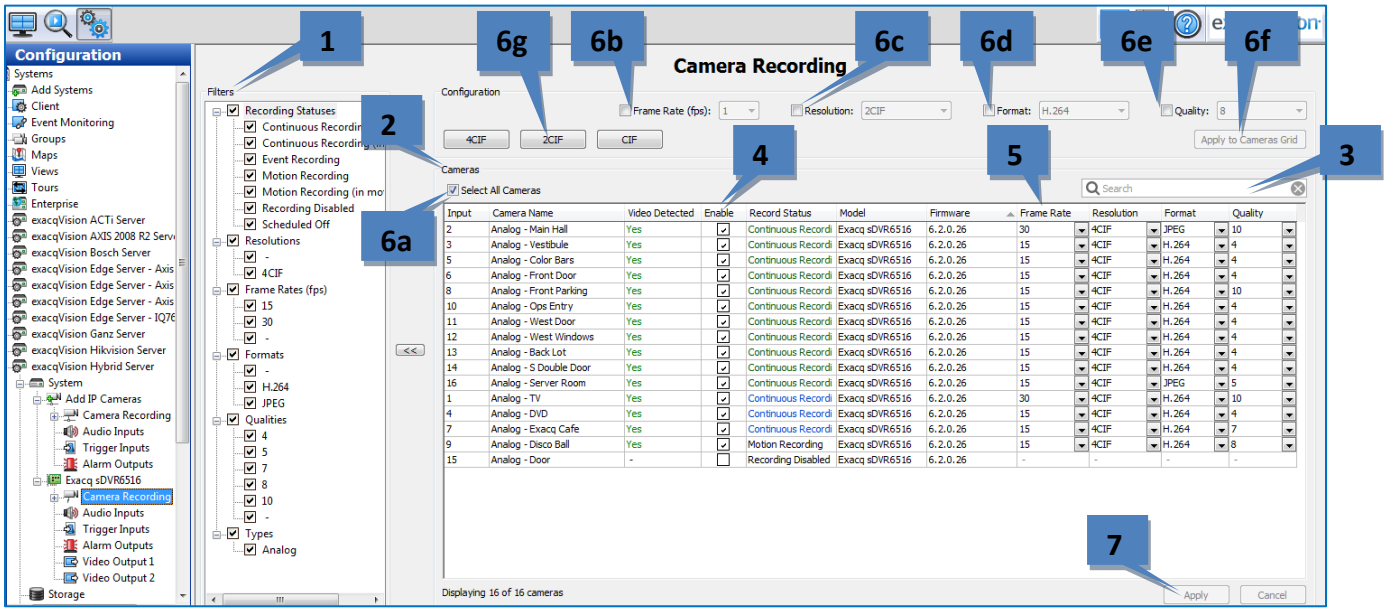
IP Camera Recording



The IP **Camera Recording** page allows you to enable IP cameras to record video and configure recording settings. The following features are available on the IP Cameras page:

1. The Filters list allows you to select which cameras are displayed in the Cameras list, based on categories such as camera type, recording status, resolution, and more.
2. The Cameras list displays all cameras on the selected server that match the criteria selected in the Filters list. Cameras can be sorted by clicking the title of any column. Several of the columns can also be hidden or displayed by right-clicking any column title, although the checkboxes, camera names, and recording settings (frame rate, resolution, format, and quality) cannot be hidden.
3. To search for a camera in the list, enter text in the Search field. If any of the information about a camera entry matches the Search text in any displayed or hidden column, the camera entry is shown; all other camera entries are hidden. To display the rest of the cameras that match the Filter criteria, delete the text in the Search field.
4. The Enable column contains check boxes that allow you to enable or disable recording from that camera. By default, the check box is selected if a signal is detected; however, you can manually disable recording on a camera that is connected and sending a signal to the system.
5. Recording settings can be changed individually for a camera by selecting any of the drop-down lists in the Frame Rate, Resolution, Format, and Quality columns. The options available in each drop-down list can vary by manufacturer and model. If a drop-down list is not displayed for a camera in any of the fields, the camera does not support any other settings for that parameter.
6. Alternatively, to apply a quality setting to multiple cameras simultaneously, select the checkbox (a) in the first column for each applicable camera (or select the Select All Cameras checkbox), select Quality checkbox (b), choose a video quality from the drop-down list (c), and click Apply to Cameras in Grid (d). The quality should now be modified for all selected cameras, as shown in the Quality column in the Cameras list (e).
7. Click Apply to activate any changes.

Analog Camera Recording



The analog **Camera Recording** page allows you to enable analog cameras to record video and configure recording settings. This page is similar to the IP Camera Recording page, with a few minor differences. The following features are available on the IP Cameras page:

1. The Filters list allows you to select which cameras are displayed in the Cameras list, based on categories such as recording status, resolution, and more.
2. The Cameras list displays all cameras on the selected server that match the criteria selected in the Filters list. Cameras can be sorted by clicking the title of any column. Several of the columns can also be hidden or displayed by right-clicking any column title, although the Enable column, camera names, and recording settings (frame rate, resolution, format, and quality) cannot be hidden.
3. To search for a camera in the list, enter text in the Search field. If any of the information about a camera entry matches the Search text in any displayed or hidden column, the camera entry is shown; all other camera entries are hidden. To display the rest of the cameras that match the Filter criteria, delete the text in the Search field.
4. The Enable column contains check boxes that allow you to enable or disable recording from that camera. By default, the check box is selected if a signal is detected; however, you can manually disable recording on a camera that is connected and sending a signal to the system.
5. Recording settings can be changed individually for a camera by selecting any of the drop-down lists in the Frame Rate, Resolution, Format, and Quality columns. The options available in each drop-down list can vary by manufacturer and model. If a drop-down list is not displayed for a camera in any of the fields, the camera does not support any other settings for that parameter.
6. Alternatively, to apply a quality setting to all displayed cameras simultaneously, enable the Select All Cameras checkbox (a), select one or more of the Frame Rate (b), Resolution (c), Format (d), or Quality (e) checkboxes, select a setting for each selected parameter, and click Apply to Cameras in Grid (f). Note that the resolution can be alternatively be changed for all cameras using the 4CIF, 2CIF, and CIF buttons. The settings should now be modified for all selected cameras, as shown in the Cameras list.

   NOTE: If a parameter is greyed out in the Configuration section, a setting universal to all selected cameras is not available for that parameter.

7. Click Apply to activate any changes.

Camera Settings

The **Camera Settings** page is where you configure the individual IP and analog camera settings such as camera name, onscreen display, PTZ settings, video settings, recording quality and motion and video masks. This page is similar for IP and analog cameras, but certain features might be unavailable depending on the type of camera you are configuring. The following features are available on the Camera Settings page:

1. Use the Configuration tree to select the camera that you want to configure.
2. A live view of the selected camera is displayed.
3. Basic information about the camera is listed.
4. A series of tabs allows you to complete the rest of the camera's configuration, as described in the following sections.

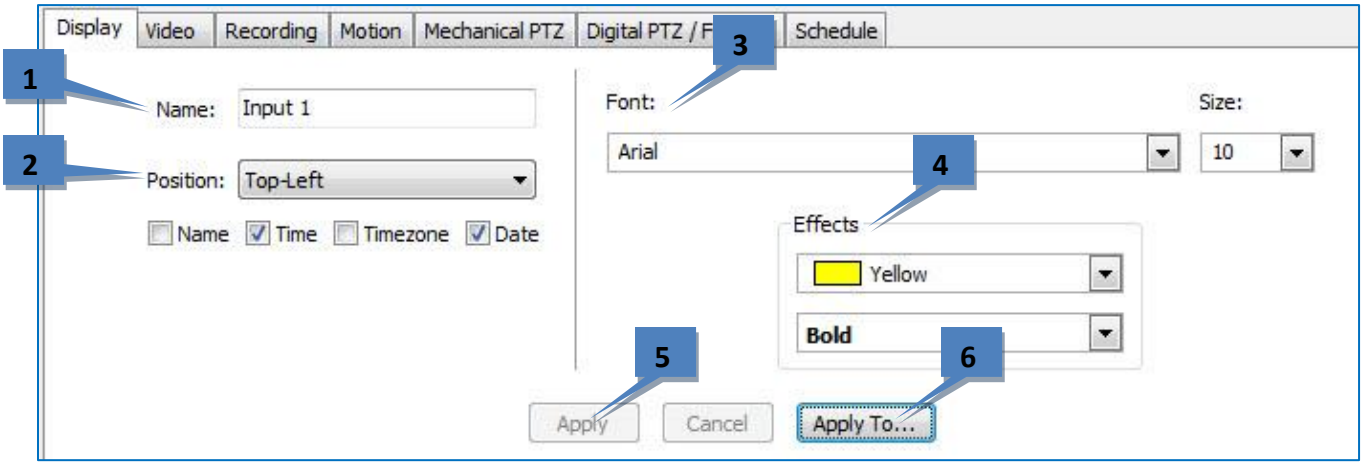
IMPORTANT NOTES

The tabs available for each camera, the settings available on each tab, and the options available for each setting can vary greatly among camera manufacturers and models. If you see a setting in the following sections that does not appear onscreen, that setting is not available for that camera.

Many IP camera settings that are not available in the exacqVision software can be accessed through the camera's web page. To view an IP camera's web page, click the hyperlink in the IP Address field. If you don't see a hyperlink beside the IP Address field, it could be for one of two reasons:

A. You are not logged in to the operating system with administrative privileges. You must log in to operating system account with administrative privileges to access the hyperlink.
B. Your client computer is not located on the same IP subnet as the IP camera. This could occur if you are using the client from a home computer to access a server at your office, for example. This restriction should cause few issues because camera website settings are typically changed only during initial configuration.

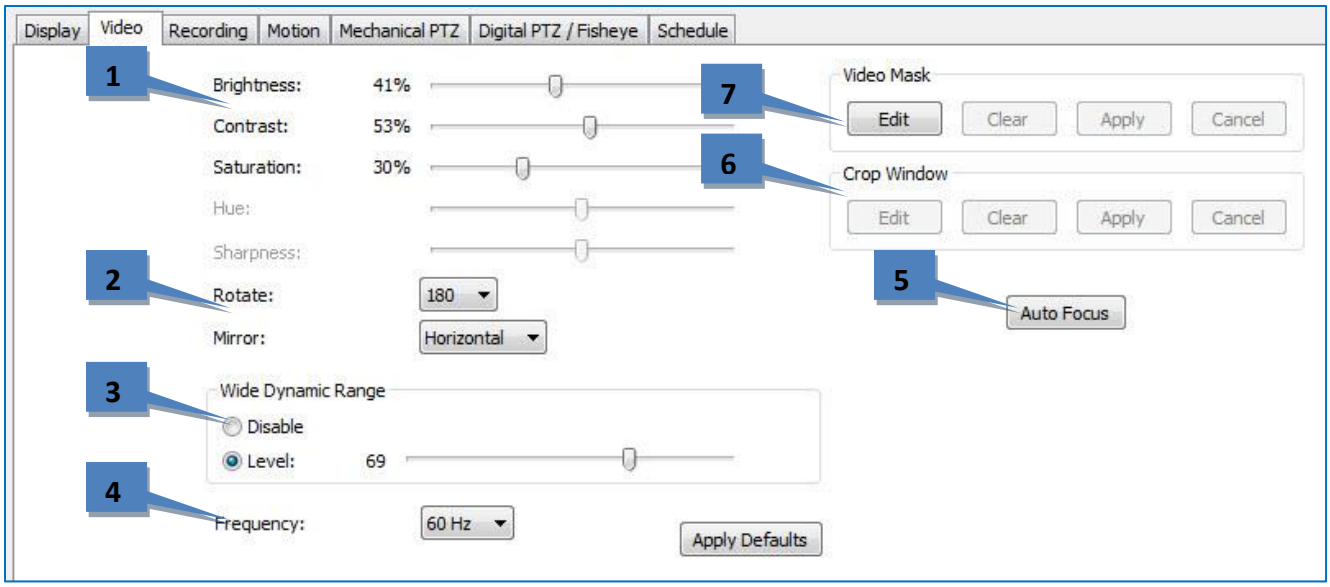
Display Tab



1. Enter a name for the camera.
2. Select the position of the onscreen display (OSD) of the camera, along with the camera information included in the display.
3. Select a font and size of the OSD.
4. Select the color of the OSD, along with bold/italics options.
5. To enable changes of settings on this tab, click Apply.
6. To enable the settings on this tab to multiple cameras on the server, click Apply To.

Video Tab

NOTE: The following settings on the Camera Settings page are not available on RTSP interfaces, and they vary on ONVIF and certain proprietary interfaces.



1. The sliders allow you to adjust the image as it is displayed on your screen.
2. Rotate and Mirror allow you to change the orientation of the camera's video. This can be useful if the camera's mount points the camera in a direction that causes video to be displayed vertically instead of horizontally.
3. Wide Dynamic Range allows you to compensate for very bright or dim lighting in the area where the camera is installed.
4. Frequency allows you to switch between 50 and 60 Hz. This allows you to reduce flicker by matching the frequency of lights and electronics screens used in different geographical regions.
5. Auto Focus allows you to adjust the clarity of the camera view.
6. Crop Window, available on certain IP cameras, allows you to crop unimportant portions of a camera image in order to save disk space. Click Edit and then use the mouse cursor to draw a box on the video window. This box will be the portion of the camera's view that will be recorded and displayed (the rest of the view will be ignored). Click Apply to activate the crop; click Edit, Clear, and Apply to deactivate the crop.
7. The following types of masks can be created on cameras connected to an exacqVision system:

    - A Motion Mask is an area of a video window where motion is ignored.
    - A Video Mask is used to block an area of a camera's view so that it cannot be seen onscreen in live or recorded video.

    NOTE: The type of masks available varies by camera. The following special section contains more detailed information about masks.

MOTION MASKS, VIDEO MASKS, AND MOTION WINDOWS

A motion mask reduces unwanted recording by ignoring motion events that occur in certain areas of an image. For example, if a camera is pointed at a room that has a moving ceiling fan in the field of view, you can avoid continuous motion recording by masking out the fan while still recording motion that occurs in the rest of the camera's field of view. Motion masks save storage space, extend recording time, and make it easier to visually see motion events on the video timeline on the Search Page. A motion window is simply the opposite of a motion mask.

To create a motion mask or motion window, complete the following steps:

1. On the Camera Settings page, click Edit in the Motion Mask or Motion Window section. This displays a blue motion grid over live video from the camera.
2. Draw the mask directly in the grid. You can either individually click each rectangle to create the mask or window, or you can left-click while dragging the cursor across multiple rectangles.

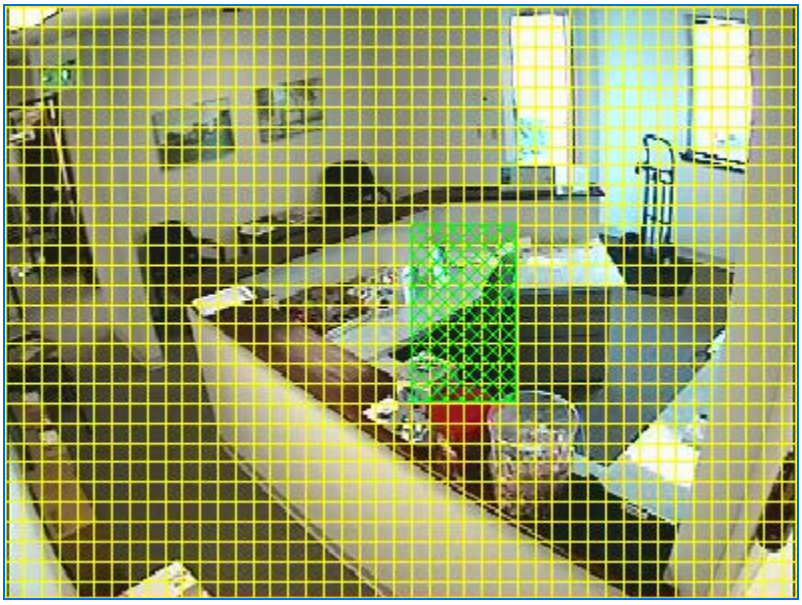
3. Click Apply to enable the motion mask or motion window.

To delete a motion mask or window, click Edit, click Clear, and click Apply.

A Video Mask is used to block an area of a camera's view so that it cannot be seen onscreen in live or recorded video. This can be useful if you don't want system users to see a combination safe or keypad that is in the camera's field of view, for example.

To create a video mask, complete the following steps:

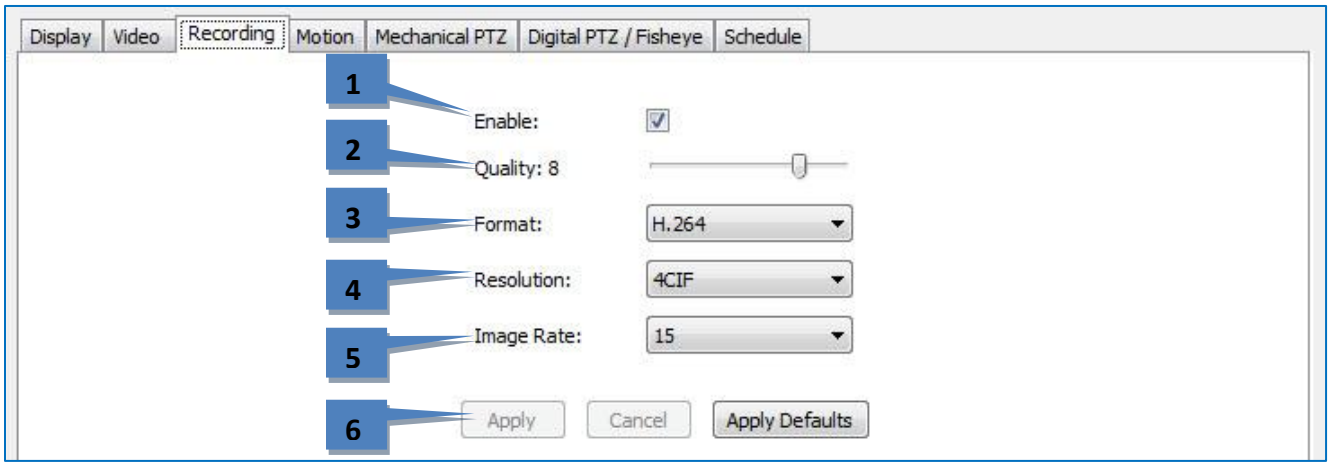
1. On the Camera Settings page, click Edit in the Video Mask section. This displays a yellow grid over the live video from the camera.
2. Draw the mask directly in the grid by left-clicking while dragging the cursor over the area of the grid you want to mask. A green rectangle indicates the masked area.



Click Apply. The yellow grid disappears and green rectangle is replaced by a solid gray rectangle. This area is now masked from both live and recorded video. To clear the mask, click the Clear button.

Recording Tab

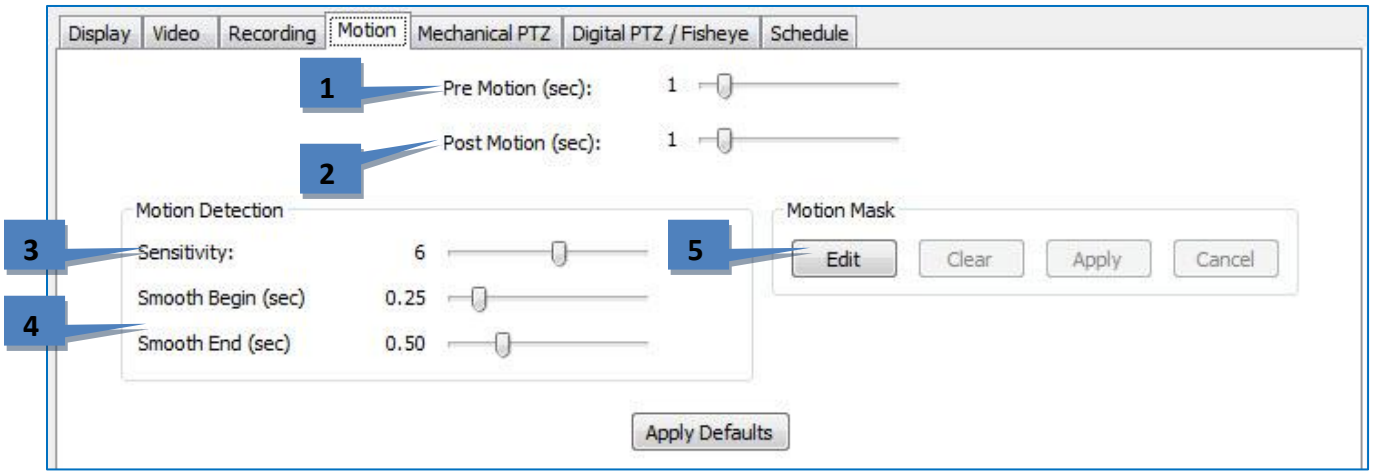
NOTE: The following settings on the Camera Settings page are not available on RTSP interfaces, and they vary on ONVIF and certain proprietary interfaces.



1. Select Enable to record video from the camera based on the configured schedule.
2. The Quality slider allows you to modify the image quality by increasing or decreasing its size. Decreasing image quality saves disk space by reducing the size of the video as it is recorded.
3. The Format setting allows you to select the compression format.
4. The resolution setting allows you to select the size of the video.
5. The Image Rate setting allows you to select the number of images recorded per second from the camera.
6. Click Apply to enable changes, or Apply Defaults to revert to the factory default settings.

Motion Tab

NOTE: The following settings on the Camera Settings page are not available on RTSP interfaces, and they vary on ONVIF and certain proprietary interfaces.



1. The Pre Motion slider adjusts the number of seconds of video that are saved before the motion event occurs. For example, suppose Pre Motion is set to 5; when you play back motion video from that camera, you will see five seconds of video that was recorded before the motion event occurred, followed by the motion event itself.
2. Post Motion is the same as Pre Motion, except that the slider adjusts the number of seconds of video that are saved after the motion event has completed.
3. The Sensitivity slider allows you to configure how much motion must occur in the camera's view to trigger motion recording (if enabled on the Schedule page). A low sensitivity setting can reduce false motion created by video noise or shadows.
4. Smooth Begin and Smooth End prevent the undesired recording of certain motion events. Smooth Begin requires a minimum amount of time for motion to occur before motion recording begins; this prevents things such as a blinking light of a laser bar code scanner in a dark room, or cars passing on a road in the distance, from triggering motion recording. Smooth End determines how much video the system continues recording after the motion is no longer detected; this prevents the recording of choppy segments of frequent motion video.

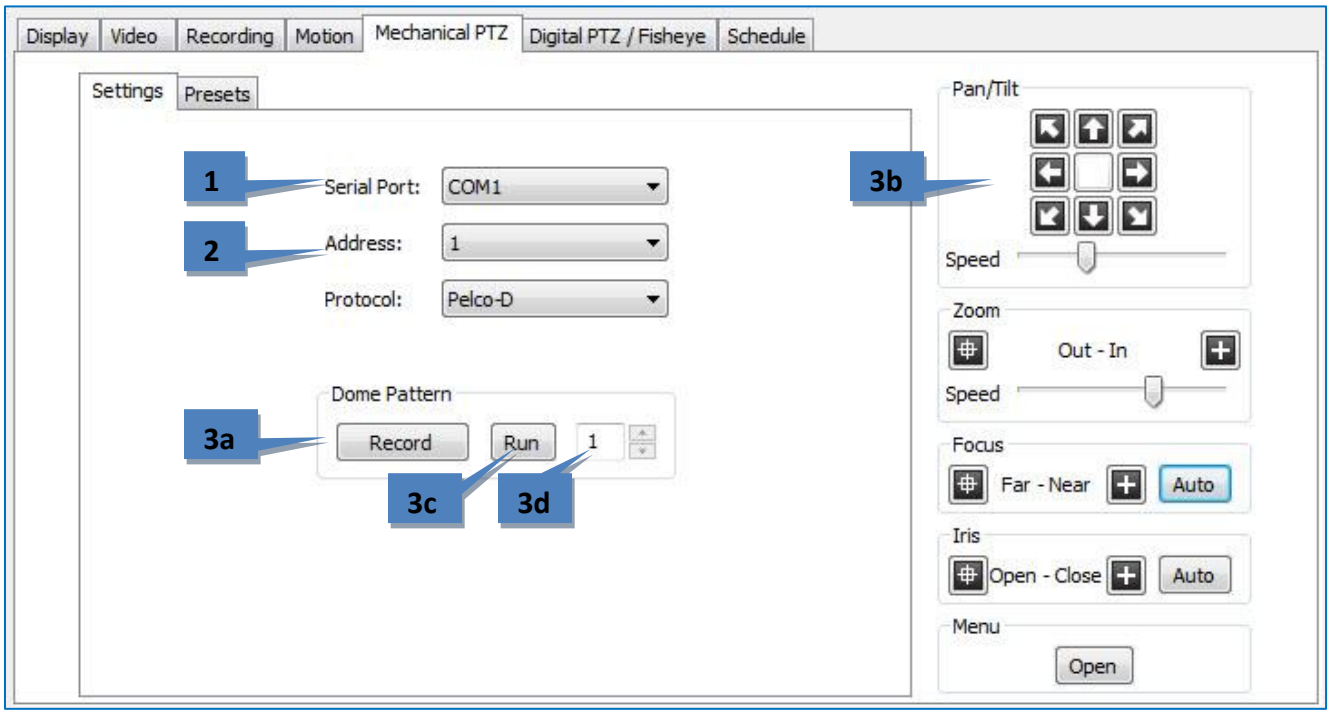
   NOTE: Smooth Begin and Smooth End are available only on analog cameras.

5. For more information about motion masks and motion windows, see the special information in the Video Tab section.
6. Click Apply Defaults to revert to the factory default settings.

Mechanical PTZ Tab

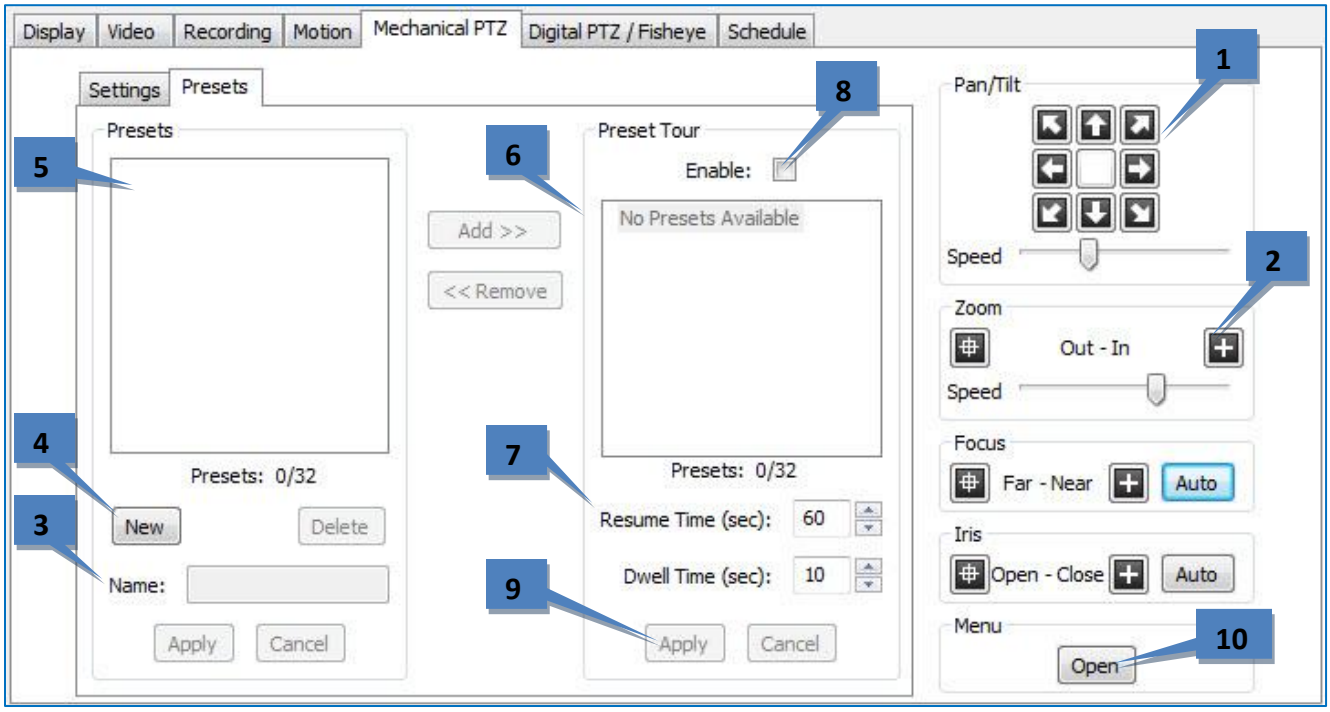
This tab contains two additional tabs: Settings and Presets.

The Settings tab allows you to configure the COM port and address of the PTZ camera.



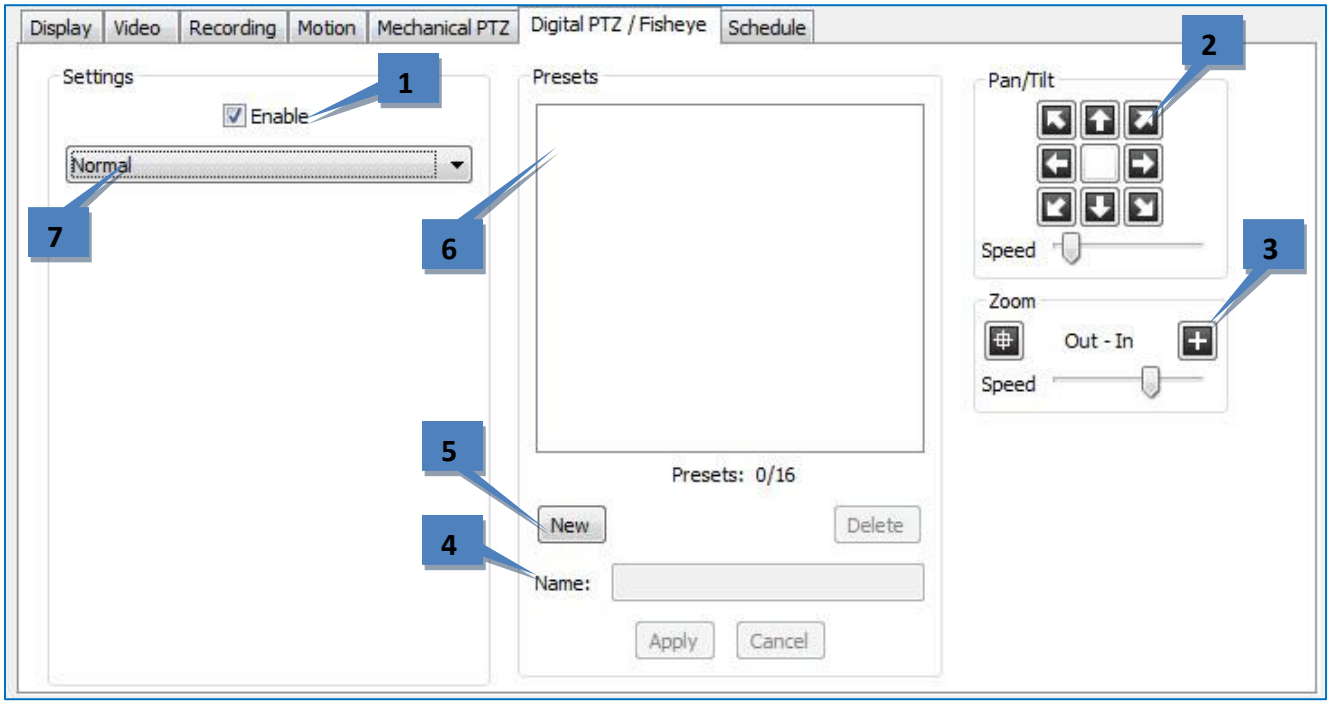
1. Select the camera's COM port from the Serial Port drop-down list. This port is configured on the Serial Ports page.
2. Select the camera's Address as configured on the camera hardware. (The protocol is automatically displayed based on the Serial Port selected.)
3. To create a dome pattern (available only on certain analog cameras), click Record (3a), use the PTZ controls (3b) to move the camera in the pattern desired, and click Stop. Click Run (3c) to review the pattern. Use the number indicator (3d) to create additional dome patterns.

The Presets tab allows you to configure PTZ presets on the camera.



1. Use the Pan/Tilt buttons to point the camera at the desired preset location. If the camera moves too quickly or too slowly, move the Speed slider left (slower) or right (faster).
2. Adjust the Zoom, Focus, and Iris settings as desired (Focus and Iris are not available when configuring IP cameras).
3. Enter a name or number for the preset in the Name field.
4. Click New to enable the preset.
5. The preset is listed under Presets. The total number of presets configured and supported is shown under the list.
6. To create a Preset tour, select a preset from the Presets list and click Add>> to show it in the Preset Tour list. Repeat for each remaining preset that you want to include in the tour. You can re-order the presets in the Preset Tour list by clicking and dragging them to the desired place in the tour. To delete a preset from the tour, select it in the Preset Tour list and click <<Remove. A preset can be included multiple times in the tour.
7. Resume time is the number of seconds that certain PTZ functions (such as a tour, a linked event, or a soft trigger) can resume after a user manually controls PTZ functions. Dwell time is the amount of time that the camera stays on each preset.
8. Select Enable to activate the tour.
9. Click Apply to complete the process.
10. The Open button displays the camera manufacturer's onscreen menu. Actions required to accept onscreen information vary by manufacturer; clicking Iris Open and Focus Far are the most common.

Digital PTZ/Fisheye Tab



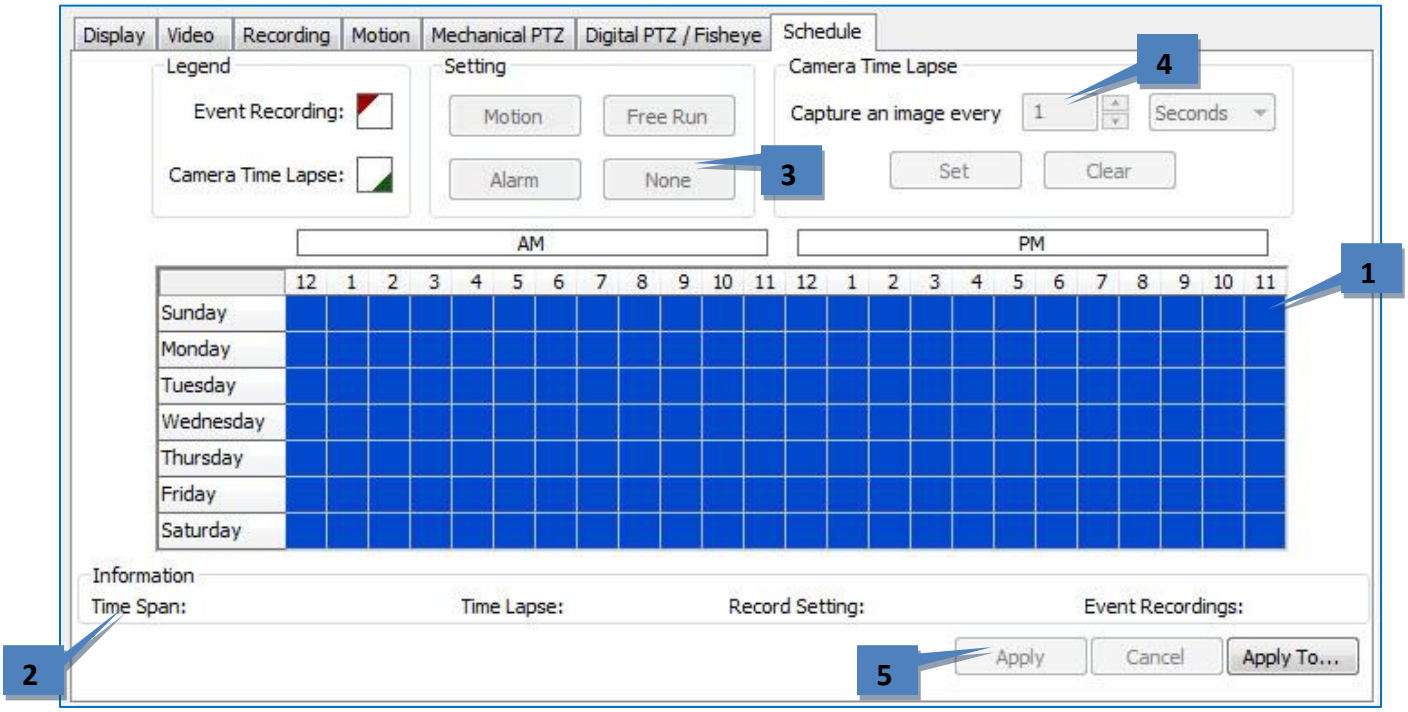
1. To enable digital PTZ functions on the Live and Search pages, select the Enable checkbox. This feature is available even if the camera is not mechanically capable of PTZ functions.
2. Use the Pan/Tilt buttons to point the camera at the desired preset location. If the camera moves too quickly or too slowly, move the Speed slider left (slower) or right (faster).
3. Adjust the Zoom setting as desired.
4. Enter a name or number for the preset in the Name field.
5. Click New to enable the preset.
6. The preset is listed under Presets. The total number of presets configured and supported is shown under the list.
7. Select a Mode for cameras with exacqVision-supported fisheye lenses. If you select Immervision, additional drop-down lists appear that allow you to select a model and mounting options.

NOTE: When you create a PTZ preset, it is initially named New_preset_1 by default. Then, if a PTZ preset named New_preset_1 exists, the next PTZ preset is named New_preset_2. However, if you create a new digital preset, it will also be named New_preset_1, regardless of whether there is already a PTZ preset with that name. To avoid having both a PTZ preset and a digital preset with the same name, make sure you enter a unique name for each preset that you create.

Schedule Tab

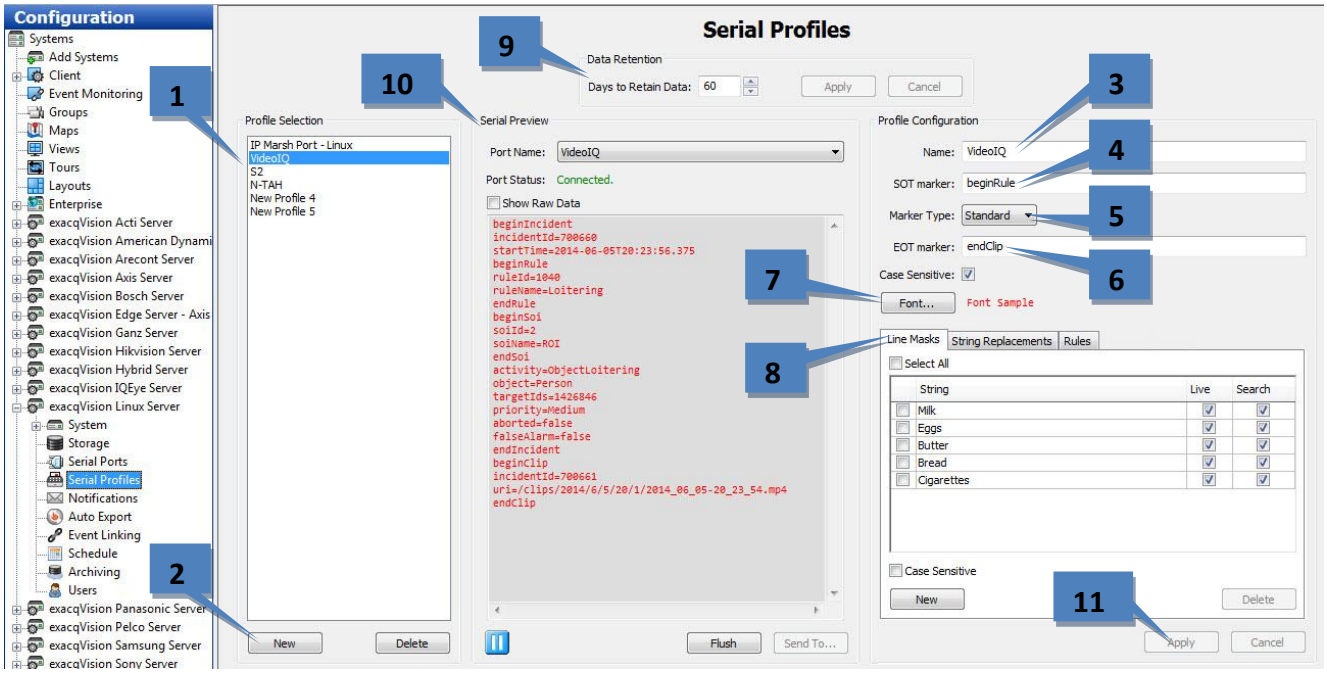
NOTE: This tab allows you to create a recording schedule specifically for this camera. The Schedule tab includes additional options for creating a schedule for all cameras on the server.

1. In the grid, draw a rectangle that corresponds to the hours for each device that you want to schedule.
2. When you hover the cursor over a square, note the details displayed in the Information section.
3. Select the appropriate Setting button to determine whether video should always be recorded from this camera (Free Run), or only when Motion or Alarm events occur.
4. To configure time-lapse recording, select the number of images you want to record every second or minute, and then click Set.
5. Click Apply to enable the schedule for this camera, or click Apply To if you want to enable the schedule on all cameras on the server.



Serial Profiles

The Serial Profiles page enables the exacqVision server to integrate with serial data devices such as point-of-sale (POS) and bank machine systems.



1. To view an existing profile, select it from the list.
2. To add a new profile, click the New below the list of profiles.
3. Enter a unique name in the Profile Name field in the Current Profile Properties box.
4. The SOT Marker, or Start of Transaction Marker, tells the exacqVision System when the transaction has started. For example, you could enter the first line shown on a receipt. **This entry is case-sensitive.**
5. Select the marker type (standard or XML).
6. The EOT Marker, or End of Transaction Marker, tells the exacqVision System when the transaction has ended. For example, you could enter the last line shown on a receipt. **This entry is case-sensitive.**
7. The Font button allows you to select the font you want to be displayed on the Live view.
8. The Line Masks and String Replacements tabs are discussed starting on the following page.
9. The Data Retention section allows you to select the number of days that serial data is stored before it is automatically deleted.
10. The Serial Preview section allows you to see an example of the serial data coming through the selected port in the selected profile. Select Show Raw Data to see all the invisible characters between lines of data (sometimes the desired EOT or SOT is hidden in the invisible data).
11. When finished, click Apply.

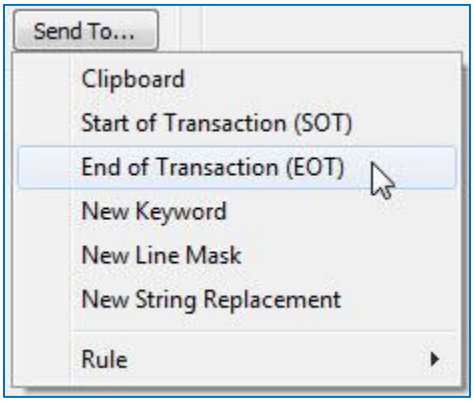
You have now created the new serial profile.

Please read the important notes regarding serial profiles on the following page.

SERIAL PROFILE NOTES:

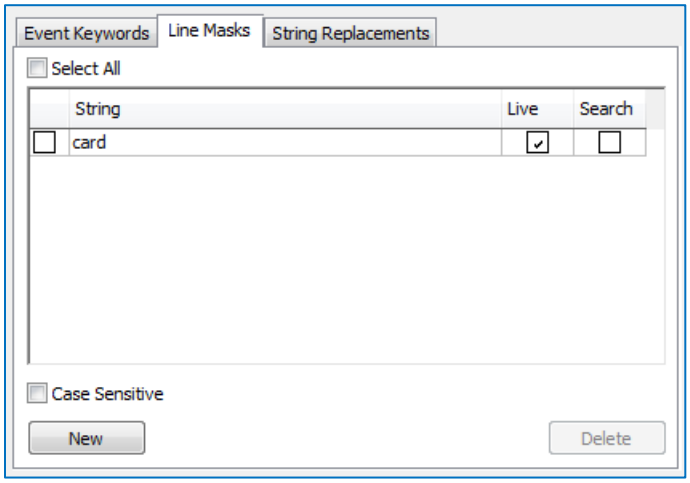
- You can require case sensitivity for all strings by selecting the appropriate Case Sensitive option under each list.
- To enter the ESC (0x1b) ASCII character as the SOT, EOT, mask, or key word, enter "/x1b" in the appropriate field. CR, LF, or 80 characters terminates a line.
- The Send To button allows you to copy a string from the Serial Preview section and save it as a SOT, EOT, keyword, line mask, or string replacement. You can also save the string from one rule to a new rule or an existing rule. This feature helps you avoid the difficulty of typing complex strings.

  To use this feature, pause the serial preview display, highlight the string, click Send To, and select an option from the pop-up menu.

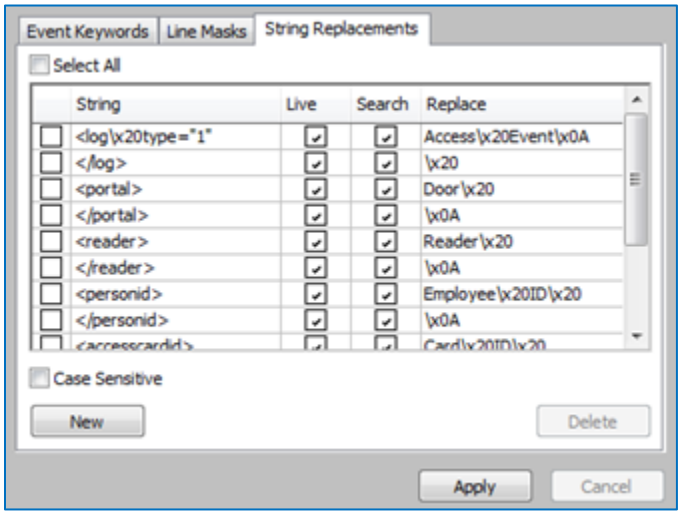


- The Flush button allows you to display the next line of data in the Serial Preview window, if the serial port timeout is zero, and the data has not reached the Max Line Length, and an EOT has not been transmitted. See the following section for more information about configuring serial ports.
- Configured rules are available as an Event Source on the Event Linking page. See the "Event Linking" section for more information.

The Line Masks tab allows you to black out lines so they are not visible on the live camera or through recorded data. (This can be used to hide credit card information.) Enter one or more signal words in the String field, and the system will black out the entire line on the live display screen, on the search results, or in both cases, as selected.

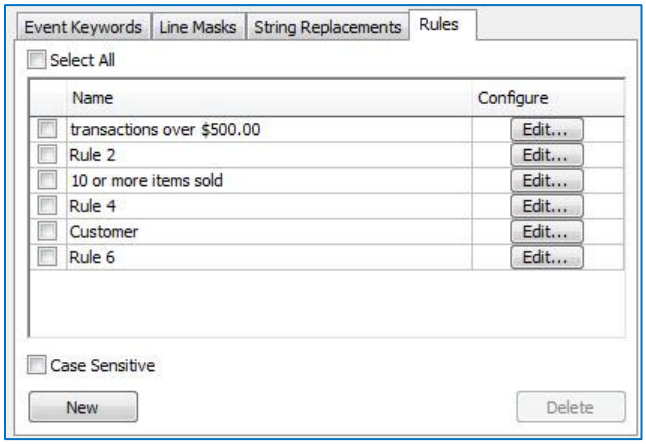


The String Replacements tab allows you to modify serial data to a human-readable format. In the String column, enter information as it appears in the serial data; in the Replace column, enter substitute information that is easier to read and understand. Select whether the strings should be replaced in serial data on the live display screen, on the search results, or in both cases.

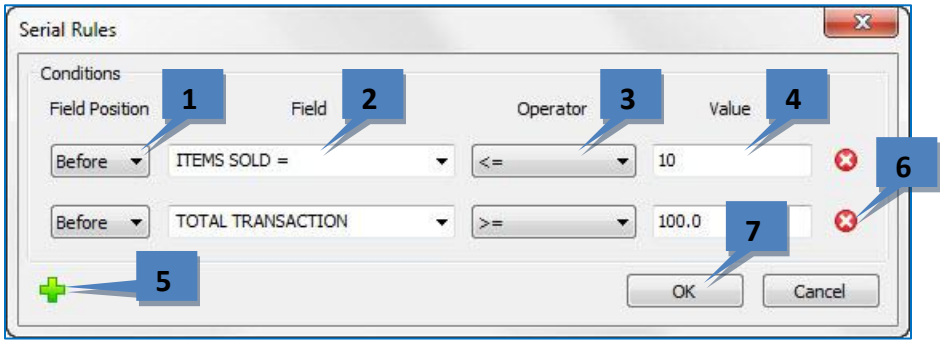


NOTE: Certain characters must be entered in ASCII format. For example, spaces should be entered as "/x20," and carriage returns should be entered as "x0A." It might require several adjustments to make the replacement text appear exactly as desired.

The Rules tab allows you to create serial information conditions that can be used for more detailed serial searches.



Click New to create a rule, or Edit to change an existing rule. This opens the Serial Rules page. To configure a rule, complete the following steps:

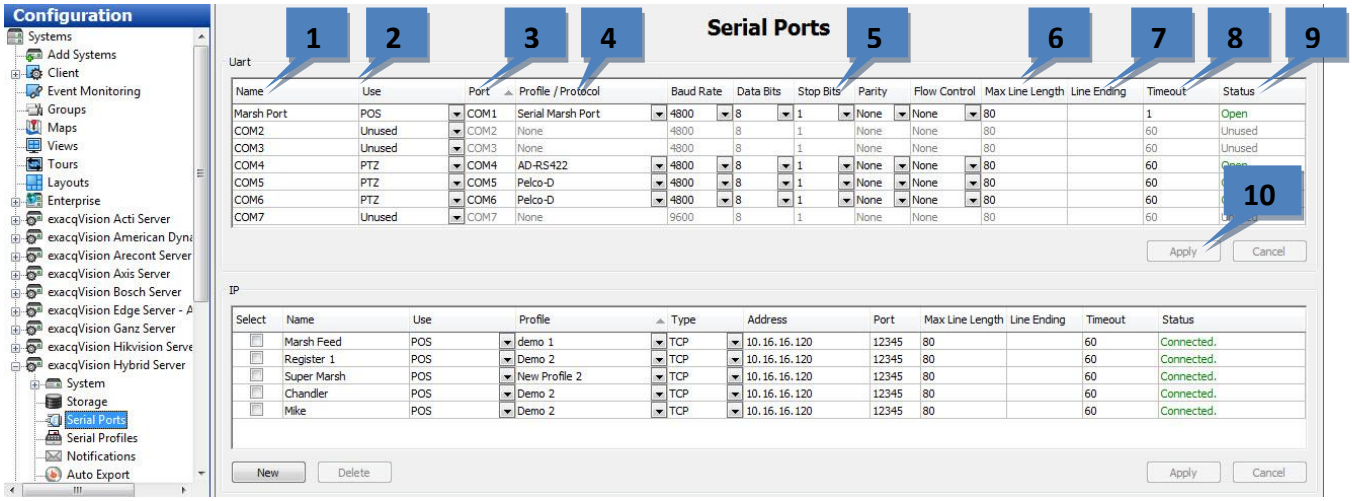


1. Select whether the identifying text occurs before or after the value of interest.
2. Enter the exact identifying text for the value of interest.
3. Select the operator (such as greater than, or equal to).
4. Enter the value of interest, or if appropriate, the maximum/minimum value.
5. Click the green plus button to add conditions to the rule, if needed.
6. Click a red X button to delete a condition.
7. Click OK after the rule is completely configured.

Now the rule should be available in the Serial Search drop-down list on the Search page, and you can search for all transactions that match the conditions in the rule.

Serial Ports

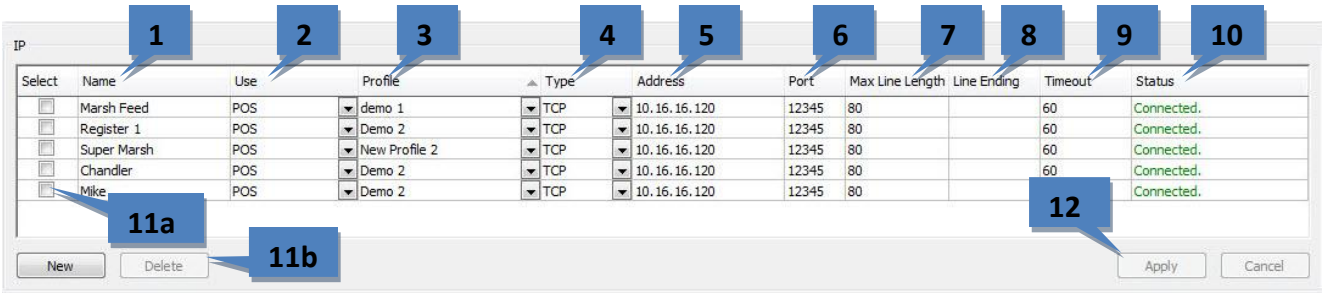
The Serial Ports page allows you to configure serial ports on your exacqVision system so that they can be used to communicate with serial devices such as POS terminals or pan-tilt-zoom (PTZ) cameras. There are two Serial Ports sections — one for standard UART (Universal Asynchronous Receiver/Transmitter) and one for serial ports over IP.



For a UART serial port, connect the wires to the serial port and then configure the port. The system automatically detects and displays the serial ports. You can configure the following settings on each port:

1. Enter a unique name in the Name field.
2. Select the intended use of the serial port from the drop-down list in the Use column. The choices are unused, PTZ (pan/tilt/zoom), POS (point of sale), ATM (automatic teller machine), or Access Ctrl. Generally, the POS mode is used to record transactions at a cash register. By default, the last serial port listed is the built-in RS-485 port.
3. The Port is automatically selected by the Operating System.
4. The Profile/Protocol column allows you to select one of the profiles configured on the Serial Profile page. If you haven't created the appropriate profile, select New. If you select New, the Serial Profiles page will automatically open after you complete the port configuration, and then you can create the profile.
5. The Baud Rate, Data Bits, Stop Bits, Parity, and Flow Control must match the device you are connecting to. See the device's documentation for more information.
6. The Max Line Length is 80 by default. Generally, you should not change this.
7. Line Ending is the number of characters received before an end-of-line character is inserted automatically. This prevents lines from becoming extremely large.
8. Timeout is the number of seconds after which an end-of-line character is entered if a serial device has not sent text. This is useful if the serial data does not have an end-of-line character but it hasn't reached the number of characters entered in Line Ending.
9. The Status column displays the current status of the serial port.
10. When you are finished, save the settings by clicking the Apply button at the bottom of the page.

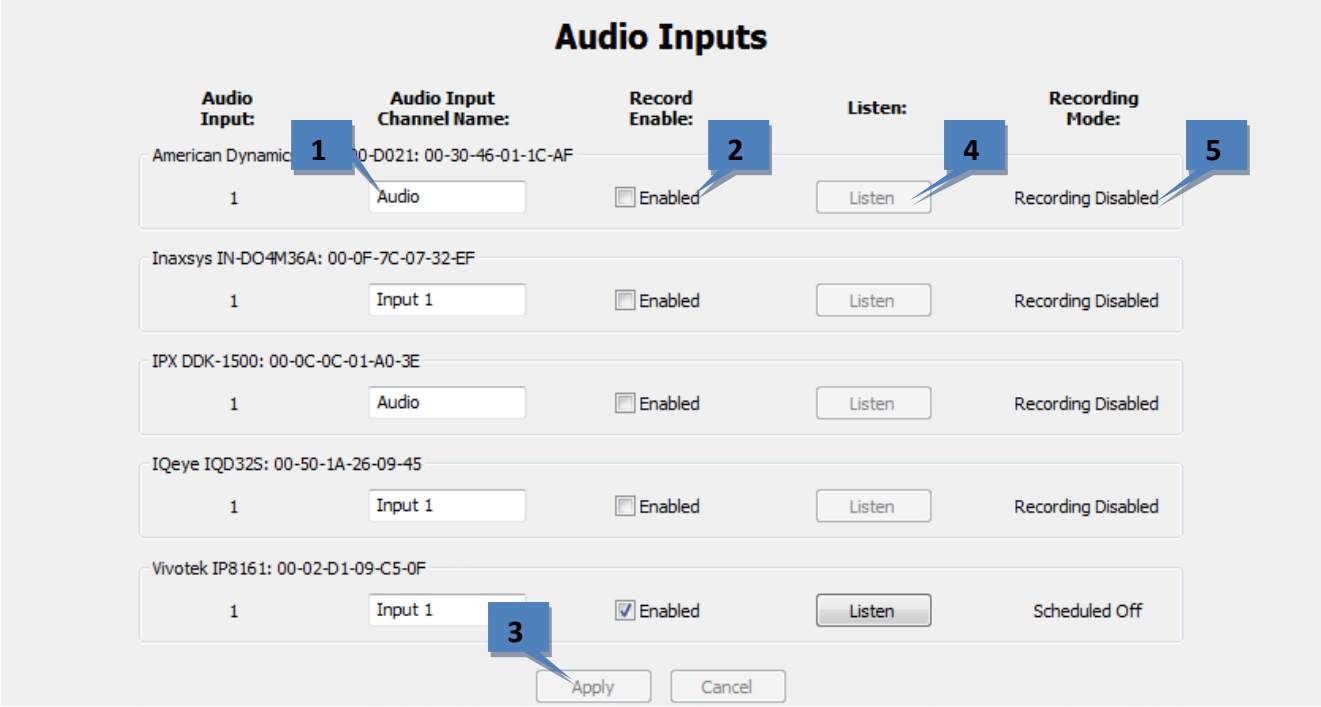
The IP section is explained on the following page.



For serial over IP, you must add the port by clicking New; the system does not automatically detect and list IP serial ports. You can configure the following settings on each port:

1. Enter a unique and descriptive name for the port that will appear to client and Live view users.
2. Select the intended use of the port (unused, POS, ATM, or Access Control).
3. Select a profile from the drop-down list. Profiles, which are created on the Serial Profiles page, are used to filter an incoming serial string to isolate useful information.
4. Select the transport type as defined by the source device manufacturer's documentation.
5. Enter the IP address of the source device.
6. Enter the TCP port of the source device as defined by the device manufacturer's documentation.
7. Enter the maximum number of characters per line sent by the source device. If you are unsure of the correct value, use the default setting of 80. Setting this number too low could result in missing characters at the end of certain lines.
8. Line Ending is the number of characters received before an end-of-line character is inserted automatically. This prevents lines from becoming extremely large.
9. Timeout is the number of seconds after which an end-of-line character is entered if a serial device has not sent text. This is useful if the serial data does not have an end-of-line character but it hasn't reached the number of characters entered in Line Ending.
10. The Status column displays whether the port is currently connected.
11. To delete an IP port, choose its Select checkbox (11a) and click Delete (11b).
12. When you are finished, save the settings by clicking the Apply button at the bottom of the page.

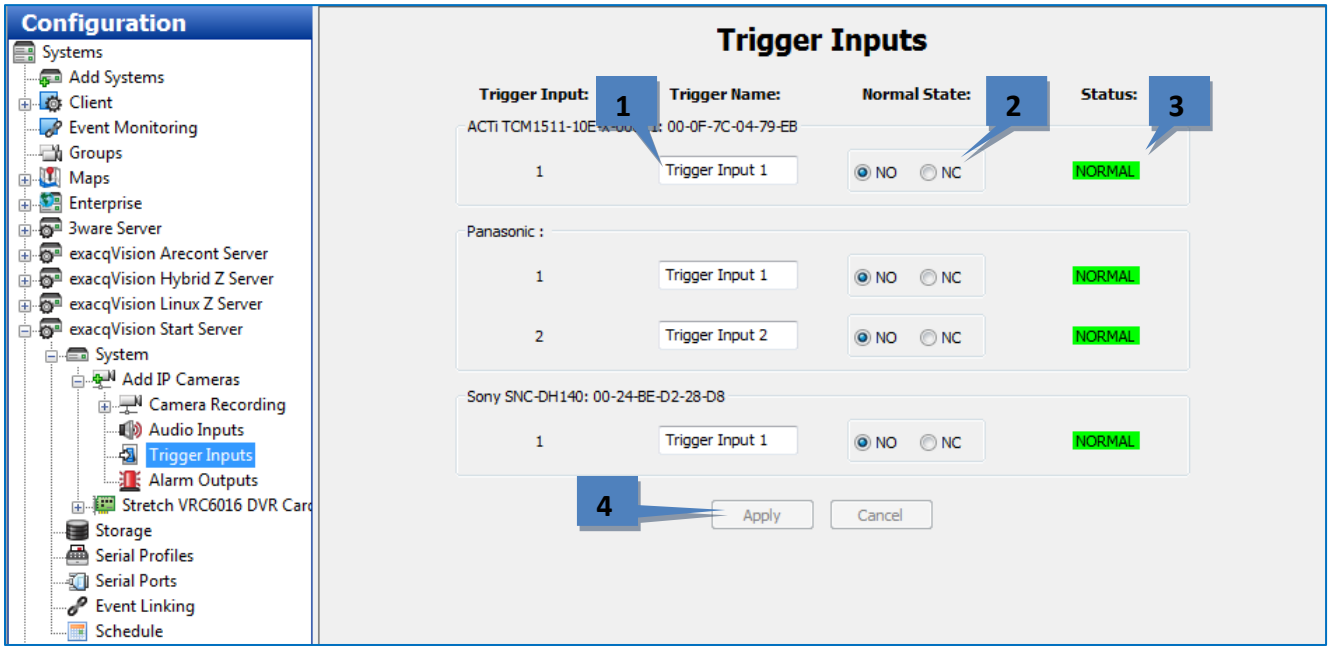
Audio Inputs



The Audio Inputs page allows you to name and enable the audio inputs you want to record. The exacqVision System ships with the audio input positions disabled due to legal restraints on audio recording in some jurisdictions. You may want to seek legal guidance prior to recording any audio inputs.

1. Enter a name for the audio input channel.
2. Select Enabled to enable audio recording on the input.
3. Repeat this process until all audio inputs have been named, and then click the Apply button.
4. Click Listen to verify the audio input connected to a channel. This is sometimes helpful when assigning names to multiple audio inputs.
5. The Recording Mode column shows the recording mode selected for the audio input on the Schedule page.

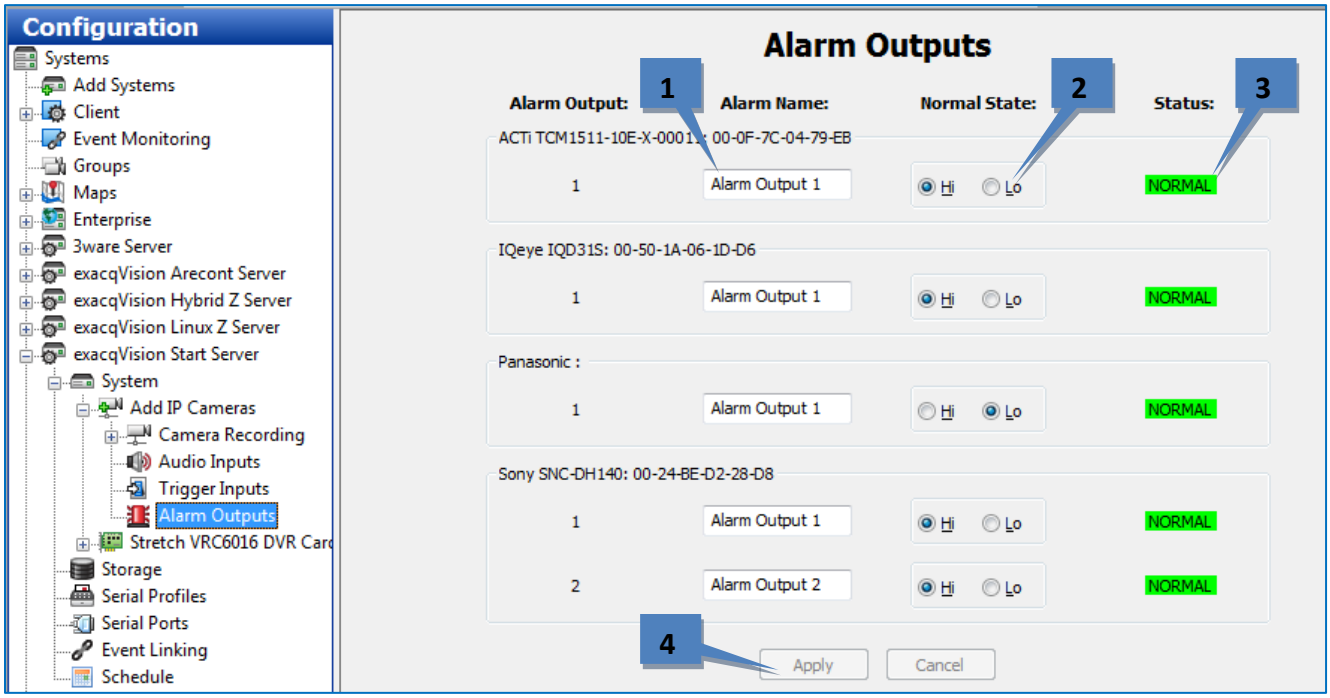
Trigger Inputs



The Trigger Inputs page allows you to assign a name and configuration to the discrete inputs on hybrid systems and certain IP cameras with alarm inputs. These triggers can be configured to trigger video recording or a relay using the Event Linking page.

1. Enter a name for each trigger input in the Trigger Name column.
2. Configure the trigger input's Normal State as Normally Open (NO) or Normally Closed (NC).
3. The Status column indicates whether the trigger input is in its normal (green) state or in its alarm (red) state.
4. When you are finished configuring trigger inputs, click Apply.

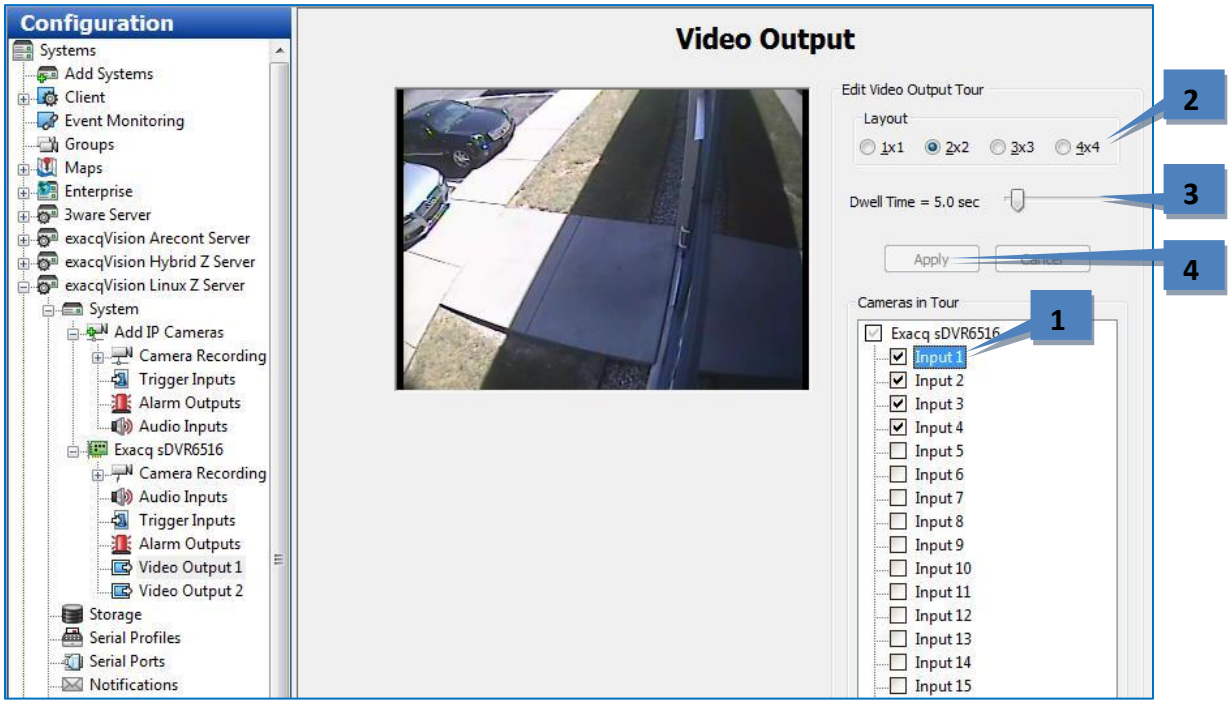
Alarm Outputs



The Alarm Outputs page allows you to assign a name and configuration to the alarm outputs on hybrid systems and certain IP cameras.

1. Enter a name for each alarm output in the Alarm Name column.
2. Configure the alarm output's Normal State as Hi (5VDC) or Lo (0VDC).
3. The Status column indicates whether the alarm output is in its normal (green) state or in its alarm (red) state. The output can be triggered to alarm state by an event configured on the Event Linking page.
4. When you are finished configuring alarm outputs, click Apply.

Video Output



On hybrid systems, the Video Output page allows you to configure your security spot monitor for touring (switching) between analog video cameras in various display modes.

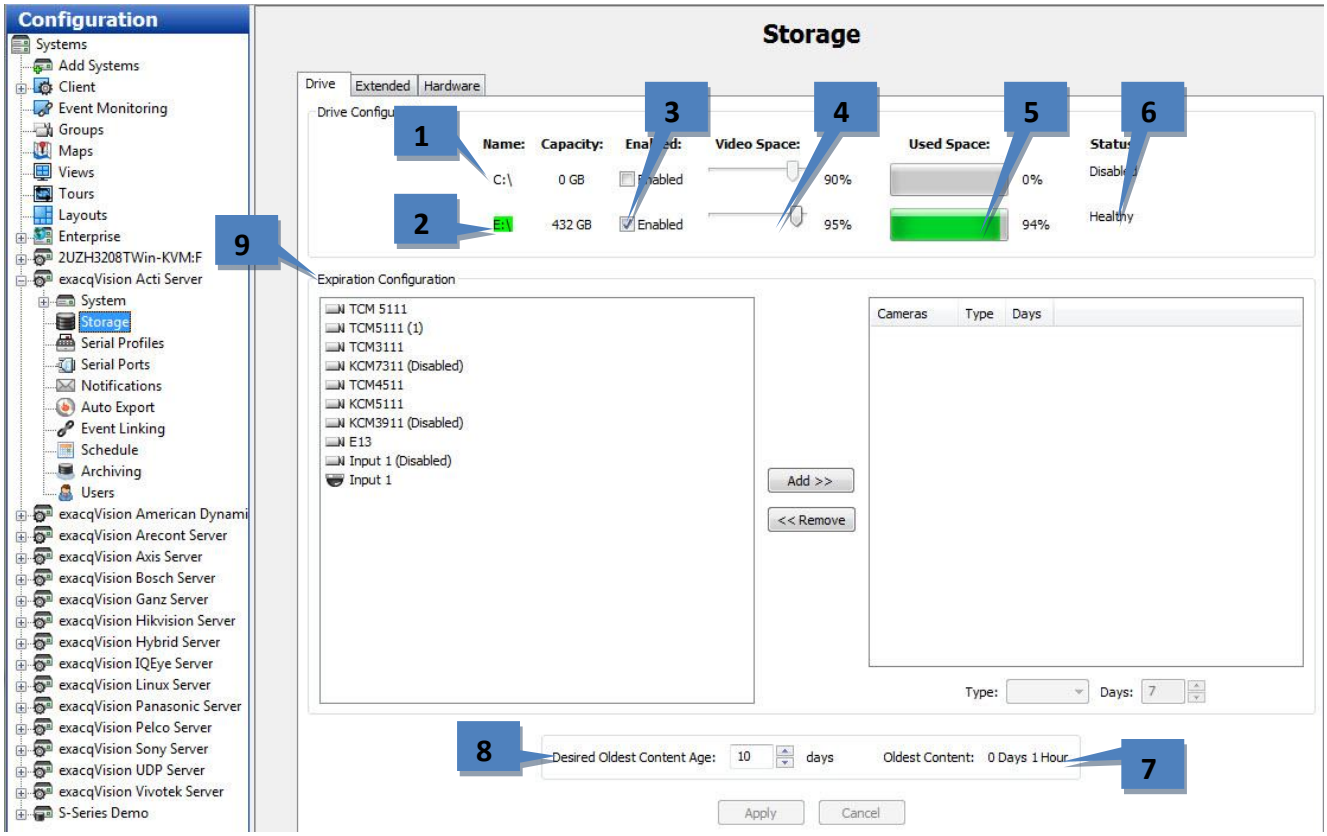
1. Select the cameras that you want to include in the tour from the Camera in Tour check box. This displays video from the camera in the video window.
2. Select a Layout mode.
3. Move the Dwell Time slider to configure the length of time before the monitor switches to the next camera. The Dwell Time range is from 1 to 60 seconds.
4. When you are finished configuring the video output, click Apply to start the tour.

Storage

The **Storage** page allows you to configure the system's hard drives for video storage and monitor the health of drives and RAID arrays. The following tabs are available on the Storage page:

- The **Drive** tab displays all the installed drives, their capacity, available storage space, and status.
- The **Extended** tab allows you to configure drives on extended storage servers.
- The **Hardware** tab allows you to monitor attributes of each hard drive and RAID controller.
- The **Network** tab, available on S-Series network storage servers, allows you to designate drives as archiving or extended storage drives.

The following features are available on the **Drive** tab:



1. The system drive ("C:\" in Windows, or "/mnt/edvr/0" in Linux) is reserved for the exacqVision software and operating system and is not enabled for video storage. Do not record video to this drive.
2. The storage drives are listed below the system drive.
3. To enable a drive for video storage, select its Enabled: box.
4. To adjust the maximum amount of drive space that can be used for data storage, adjust the Video Space slider for each storage drive. **NOTE:** Performance can decrease if you set the Video Space slider greater than 85%.
5. Used Space displays how much of the hard drive capacity is currently full.
6. Status displays the current state of the hard drive.
7. Oldest Content indicates the age of the oldest video recorded on this system. This does not affect cameras added in the Expiration Configuration section.
8. Select the target period of video that you would like to store data.
9. Expiration Configuration allows you to set minimum or maximum time periods for video on each server to be stored. For example, you could configure video to be stored for at least 30 days before it is deleted, or for video to be deleted after no more than 7 days. **See the following IMPORTANT NOTE before using this feature.**

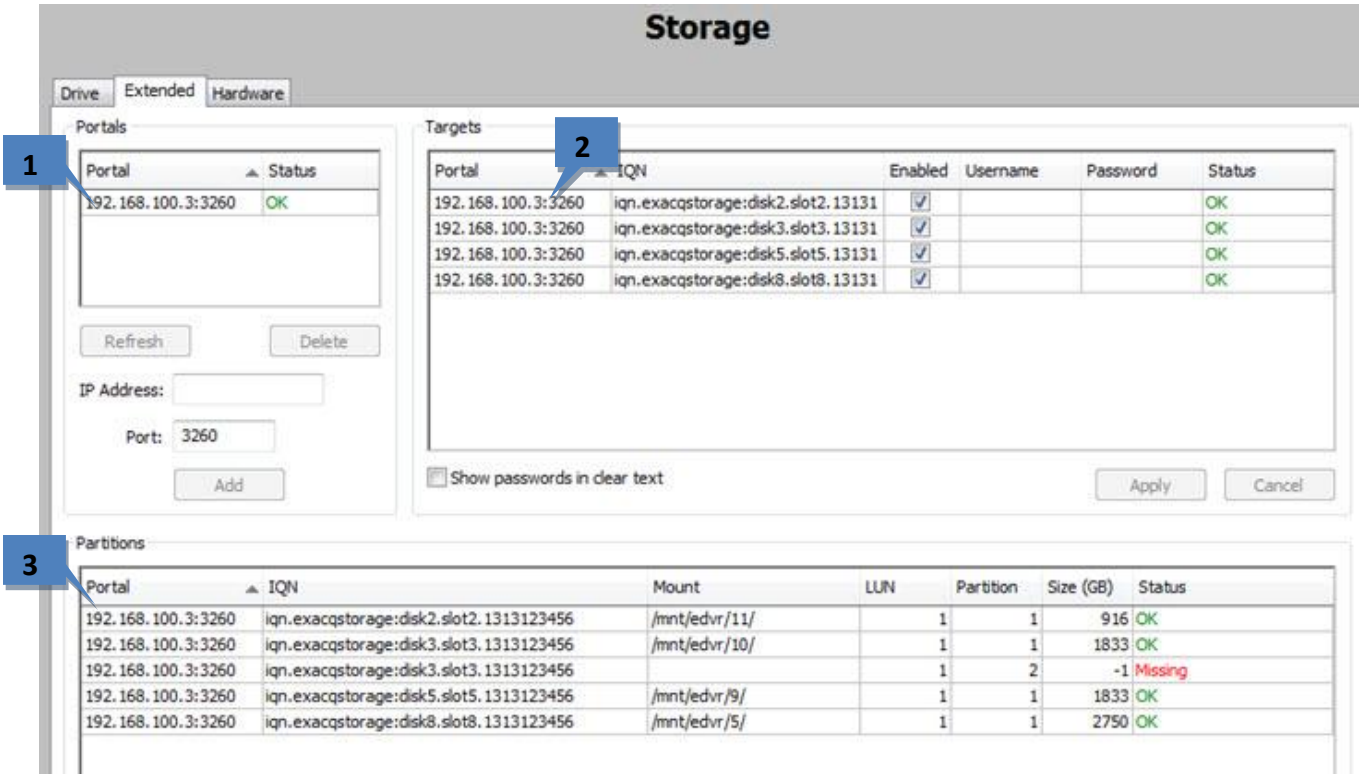
IMPORTANT NOTE

The system normally retains recorded video from all cameras for as long as possible, deleting the oldest video only when required to create room for newly recorded video. Thus, **it is recommended that you use the Expiration Configuration feature only when necessary**, such as when video must be deleted after a specific maximum time period as required by law.

When using the feature, the Days of Recorded Video indicator should be higher than the greatest number of minimum days configured for a camera in the Expiration Configuration area. For example, if you configure a camera's video to be stored for at least 30 days, the Days of Recorded Video indicator should be at least 30 (assuming the system has been recording video for at least 30 days). If the Days of Recorded Video indicator were lower than 30, video recording would stop for that camera until the oldest video stored from that camera got deleted (after 30 days).

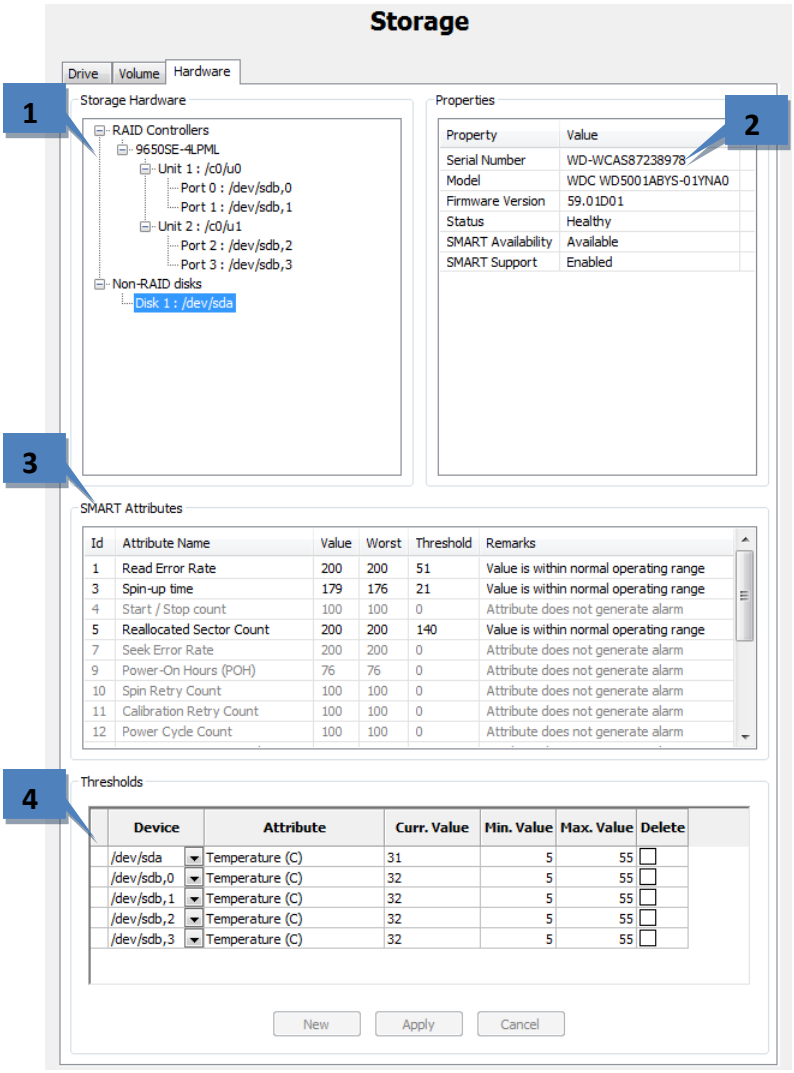
To resolve issues with video expiration, you can expand your storage capacity by adding hard drives, reducing the minimum time that video needs to be stored, or reducing frame rates or quality settings for the applicable cameras. The best way to determine your needs is by trial and error; allow the system to record at your desired settings and then monitor the Storage page to ensure that the settings will meet the storage requirements.

The **Extended** tab allows you to configure extended storage drives on S-Series network storage servers.



1. In the Portals area, click Add and enter the IP address of the S-Series system.
2. Drive targets on the system selected are displayed in the Targets area. Select and enable drive targets as desired.
3. View the status of the partitions in the list at the bottom.

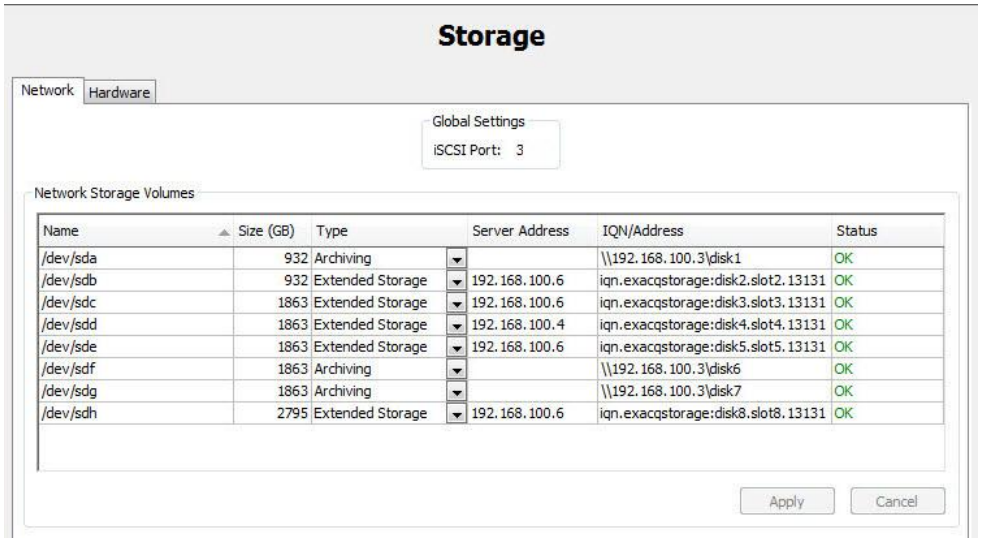
The following features are available on the **Hardware** tab:



1. The Storage Hardware section lists all the RAID controllers and hard drives installed in the system.
2. The Properties section lists properties of the controller or drive selected in the Storage Hardware list.
3. The SMART Attributes list displays the current values and operating threshold of various attributes, as provided by the hard drive manufacturer. This section is shown for informational purposes only; details about SMART attributes are available at http://en.wikipedia.org/wiki/S.M.A.R.T.
4. The Thresholds section allows you to modify the temperature thresholds for a hard drive. To do this, click New, select a hard drive from the Device drop-down list, and enter a minimum temperature and maximum temperature. Click Apply when finished.

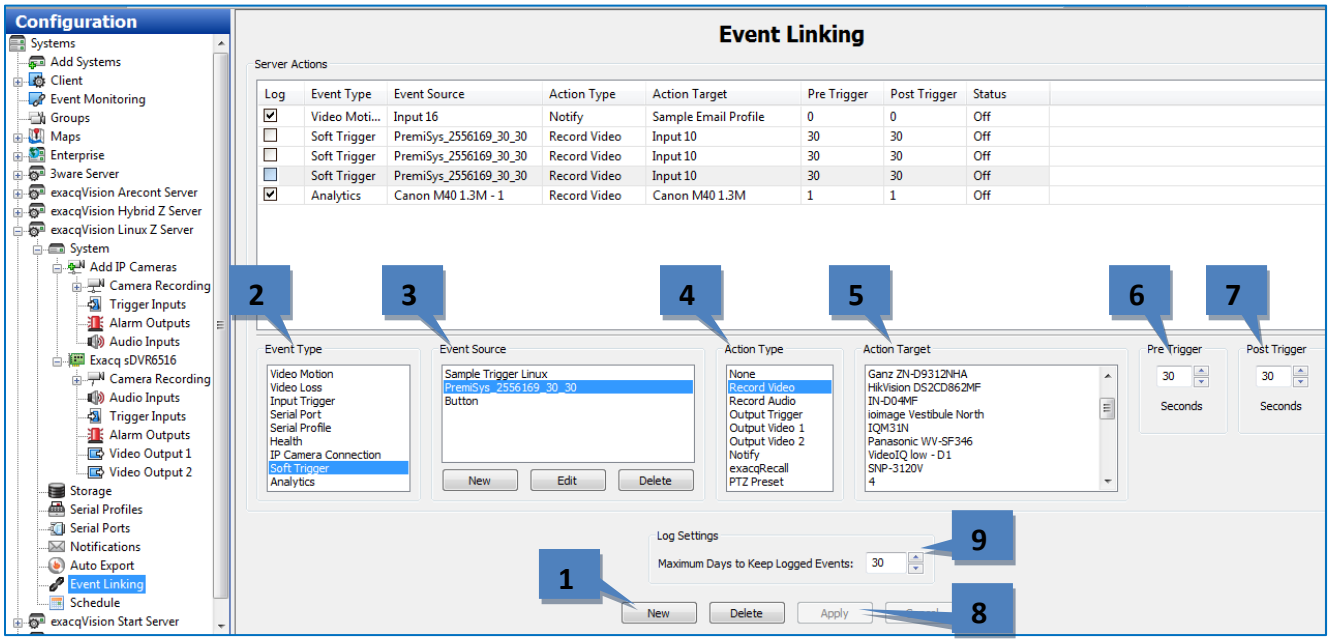
If a drive or controller is in an alarm condition, it is highlighted in red in the Storage Hardware list. Alarm conditions can include a rebuilding array, high drive temperature, drive verification failure, drive removal, new drive, and more.

The **Network** tab also appears on the Storage page on S-Series network storage servers.



All the drives installed on the S-Series server are listed on the tab, along with information and status indicators. The Type column allows you to designate each drive as an archiving drive, an extended storage drive (which operates as if it is local to the recording exacqVision system), or None.

Event Linking



The Event Linking page allows you to connect different types of events, such as the activation of an input trigger, to an action, such as recording video or triggering an alarm. Event linking provides quicker searches for specific event types. For example, you might normally search for motion video captured on a camera pointed toward a door; however, if the door has a sensor, you could improve your search by looking for video recorded whenever the door opened by linking that event with video recording.

You can see how it works by looking at the lists from left to right below the main Event List, as shown in the figure above. When the specified Event Type (2) occurs on an associated Event Source (3), Action Type (4) is triggered on an Action Target (5). These events are then stored in a database (if Log is selected in the Event List) to provide easy search capabilities. To create a new event, complete the following steps:

1. Click the New button to add the event to the Event List.
2. Select the Event Type. (In exacqVision Start, only Input Trigger and Soft Trigger are available.)
3. Select the Event Source. (If Soft trigger, Time Trigger, or Source Group is selected, you can create or edit the event source using the buttons that appear immediately below the selection box.)
4. Select the Action Type.
5. Select the Action Target.
6. Pre Trigger allows you to store buffered data that was captured up to 100 seconds before the event occurred. This feature can be used only with certain Event Types. Very large Pre Trigger can negative impact system performance.
7. Post Trigger continues the Action Type for up to 100 seconds of video after the event concludes.
8. Click Apply to save all changes to the selected event.
9. The Log Settings field determines how long the event will be stored in the Event database, from zero to 365 days.

Schedule

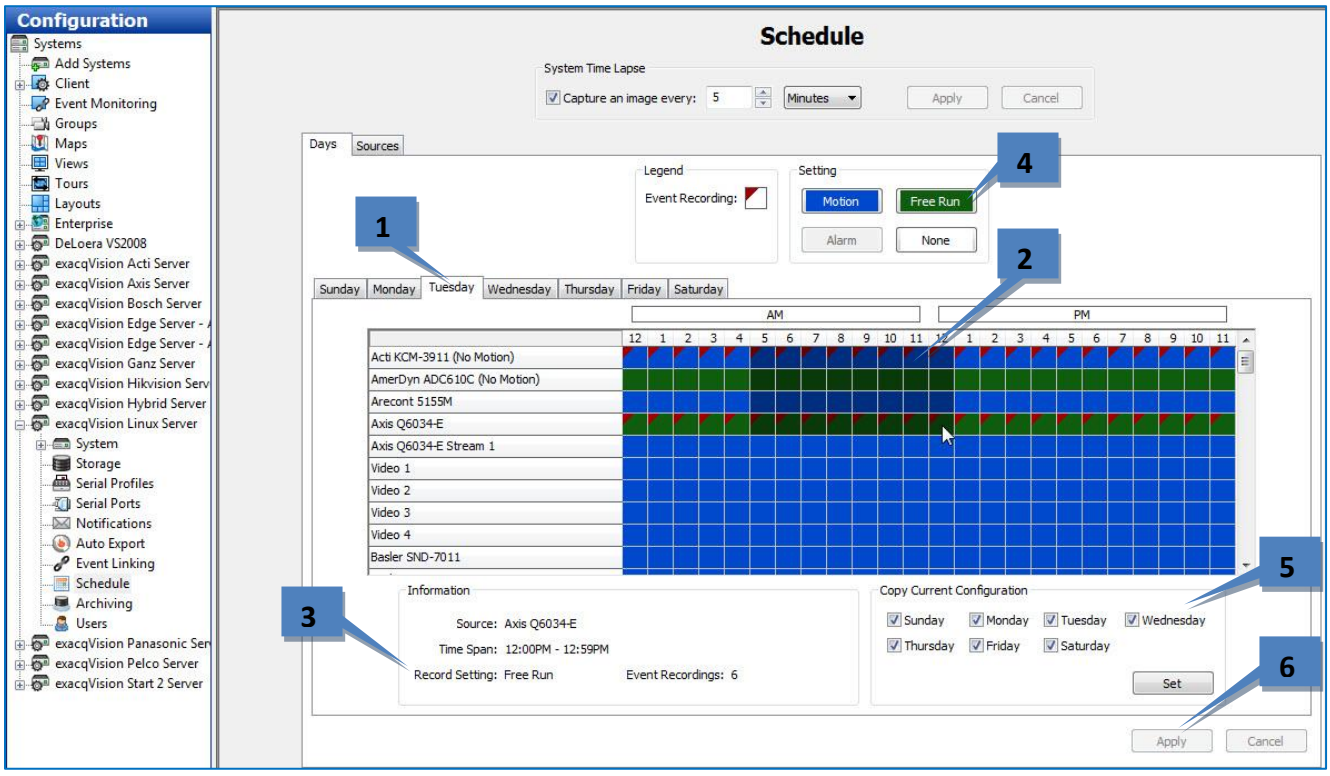
The Schedule page allows you to configure your recording schedule. By default, an exacqVision system is scheduled to record motion and events. There are four modes of video recording, which are color-coded on the Schedule page: motion (blue), free run (green), alarm (red), and off (white). Free run is continual recording. This type of recording uses a large amount of disk space.

NOTE: To configure time lapse recording, select the Capture An Image Every button, select a number, and then select Seconds, Minutes, or Hours from the drop-down list. Click Apply. Time lapse recording is not associated with the schedule configured in the grid on the Schedule page.

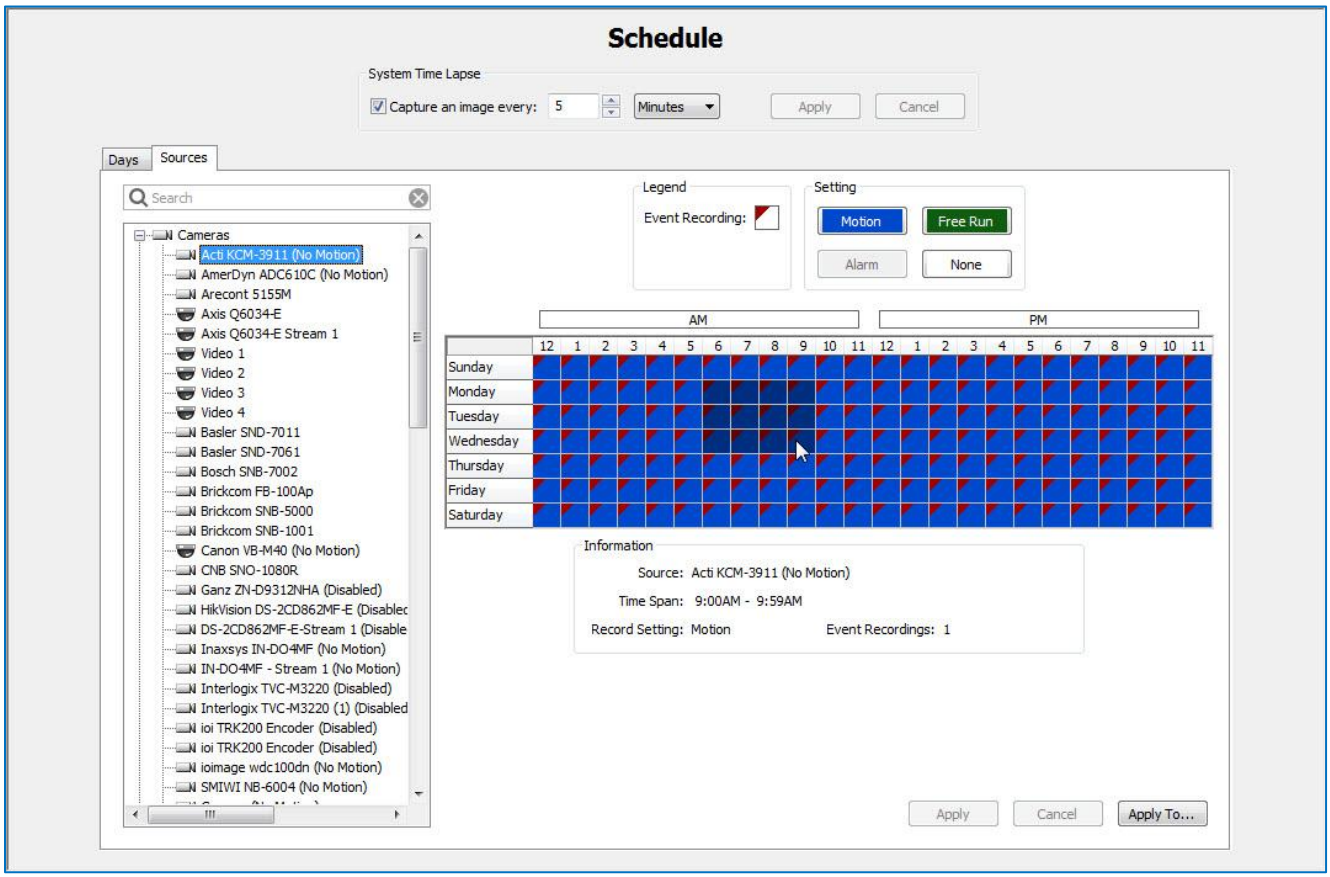
There are two scheduling tabs: Days and Sources.

On the Days tab, you can configure recording of all video, motion video, or just alarm video. To create a schedule, complete the following steps:

1. Select the appropriate tab for the day of the week.
2. In the grid, draw a rectangle that corresponds to the hours for each device that you want to schedule.
3. When you hover the cursor over a square, note the details displayed in the Information section.
4. Select the appropriate Setting button.
5. To copy the schedule from one day of the week to another, select the appropriate days of the week in the Copy Current Configuration section, and then click Set.
6. Click Apply.



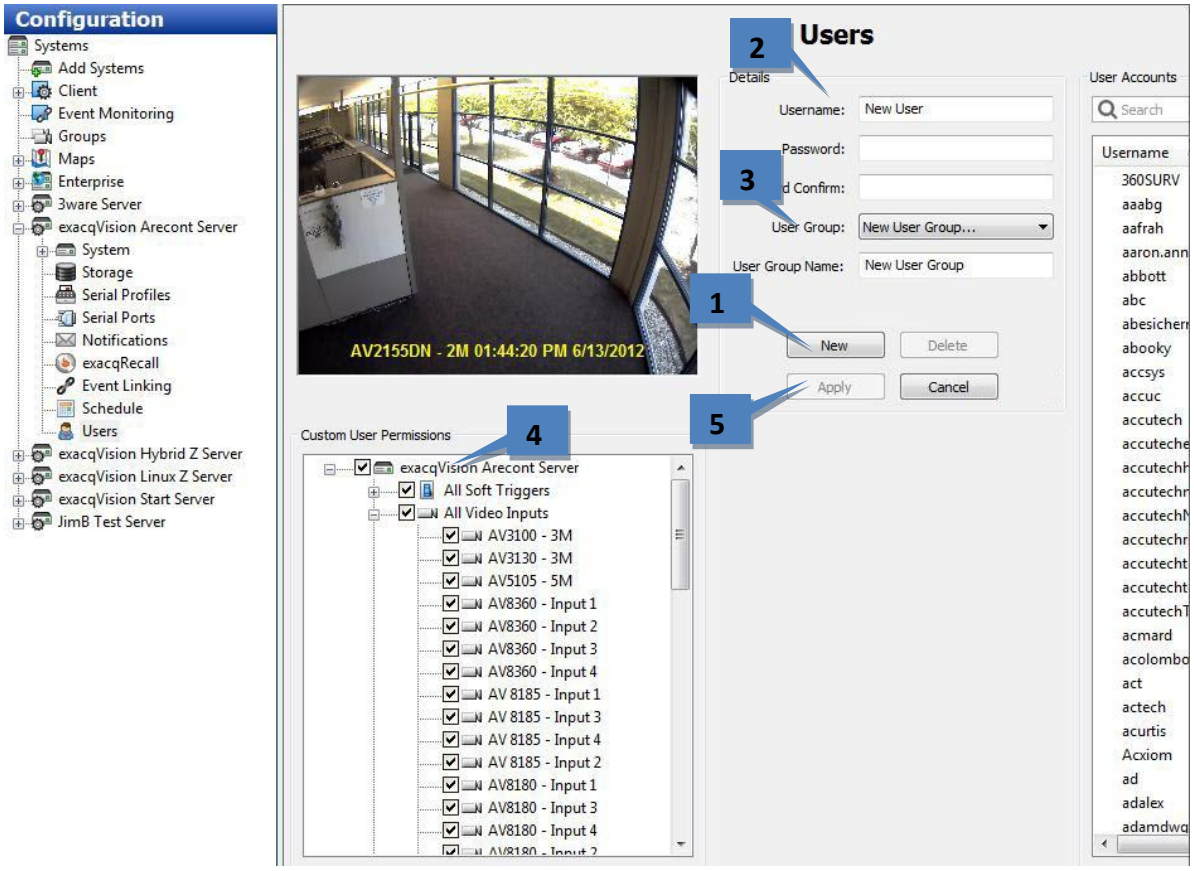
- On the Sources tab, you can configure a separate recording schedule for each device:



Select the device from the tree and schedule it in the same way as described for the Days tab.

NOTE: You can apply the one device's schedule to another device by clicking Apply To…

Users



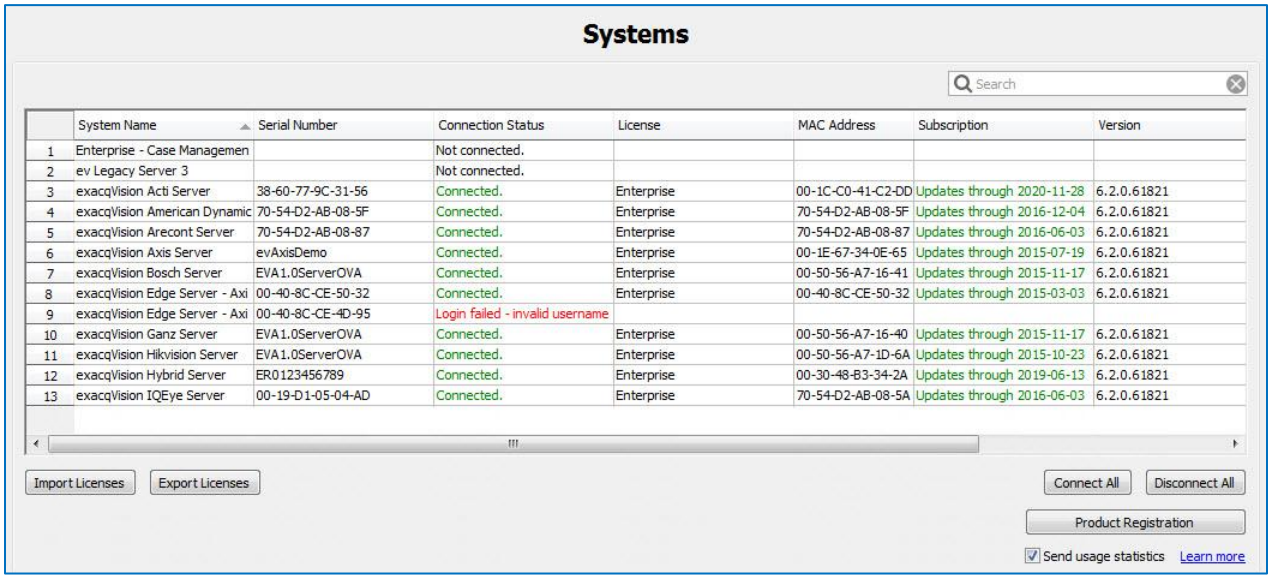
The Users page allows you to add and delete users, configure a user's group access level, and assign permissions for viewing cameras. After a user has been added to the system, the user can log in and view live and recorded video according to the permissions assigned to them.

1. To add a new user, click New.
2. Enter the name of the user in the Username field, and a login password Password and Confirm fields.
3. Select a permission level from the User Group drop-down list:

    - **Restricted:** User can view live video and search recorded video.
    - **Power User:** User has administrative permissions, except for adding or deleting users.
    - **Full Admin:** User has full administrative permissions.
    - **User Admin:** User can view live video, search recorded video, and add/delete users.

4. The Custom User Permissions section allows you to select which devices the user or group can see and operate in the exacqVision Client. You might have to deselect View Admin and User Admin under Custom User Privileges (if available) to allow the Custom User Permissions data to be edited.
5. When finished, click Apply.

Systems


Systems
Search
System Name
Serial Number
Connection Status
License
MAC Address
Subscription
Version
1 Enterprise - Case Managemen Not connected.
2 ev Legacy Server 3 Not connected.
3 exacqVision Acti Server 38-60-77-9C-31-56 Connected. Enterprise 00-1C-C0-41-C2-DD Updates through 2020-11-28 6.2.0.61821
4 exacqVision American Dynamic 70-54-D2-AB-08-5F Connected. Enterprise 70-54-D2-AB-08-5F Updates through 2016-12-04 6.2.0.61821
5 exacqVision Arecont Server 70-54-D2-AB-08-87 Connected. Enterprise 70-54-D2-AB-08-87 Updates through 2016-06-03 6.2.0.61821
6 exacqVision Axis Server evAxisDemo Connected. Enterprise 00-1E-67-34-0E-65 Updates through 2015-07-19 6.2.0.61821
7 exacqVision Bosch Server EVA1.0ServerOVA Connected. Enterprise 00-50-56-A7-16-41 Updates through 2015-11-17 6.2.0.61821
8 exacqVision Edge Server - Axi 00-40-8C-CE-50-32 Connected. Enterprise 00-40-8C-CE-50-32 Updates through 2015-03-03 6.2.0.61821
9 exacqVision Edge Server - Axi 00-40-8C-CE-4D-95 Login failed - invalid username
10 exacqVision Ganz Server EVA1.0ServerOVA Connected. Enterprise 00-50-56-A7-16-40 Updates through 2015-11-17 6.2.0.61821
11 exacqVision Hikvision Server EVA1.0ServerOVA Connected. Enterprise 00-50-56-A7-1D-6A Updates through 2015-10-23 6.2.0.61821
12 exacqVision Hybrid Server ER0123456789 Connected. Enterprise 00-30-48-B3-34-2A Updates through 2019-06-13 6.2.0.61821
13 exacqVision IQEye Server 00-19-D1-05-04-AD Connected. Enterprise 70-54-D2-AB-08-5A Updates through 2016-06-03 6.2.0.61821
Import Licenses
Export Licenses
Connect All
Disconnect All
Product Registration
Send usage statistics
Learn more

The Systems page lists all added systems, along with their serial number, IP address/hostname, connection status, license type, MAC address, subscription information, version information, status (such as, Normal, Alarm, or Motion), and days of recorded video.

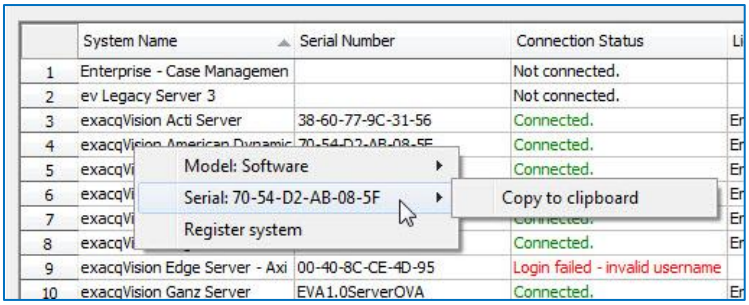
NOTE: To display or remove a column on the Systems page, right-click any column header and select the column from the pop-up menu.

The following actions can be performed on the Systems page:

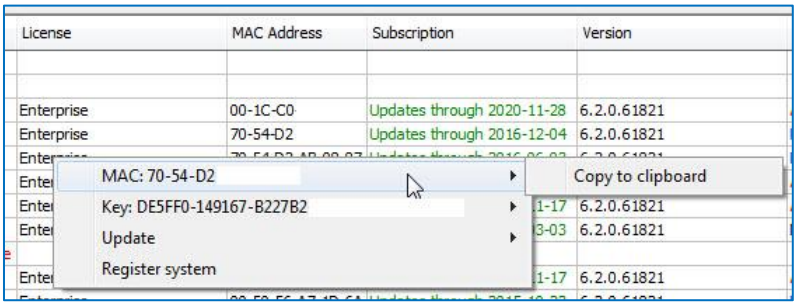
- To connect to or disconnect a system, right-click its connection status and select a Connect option or Disconnect from the pop-up menu. To connect to or disconnect multiple consecutive systems simultaneously, click on the connection status for the first system, and then press Shift while you drag the cursor up or down (and then right-click). To connect or disconnect every listed system, click Connect All or Disconnect All.

  NOTE: If the physical connection between the client computer and server is interrupted while you are connected to the server in exacqVision Client, the Connection Status is displayed as Network Activity Timeout. The status is then displayed as Disconnected after a specific amount of time that varies among operating systems.

- To view the System Information page for a system, double-click its information listed in any column.
- To view model number and serial number information for a system, right-click the system name.

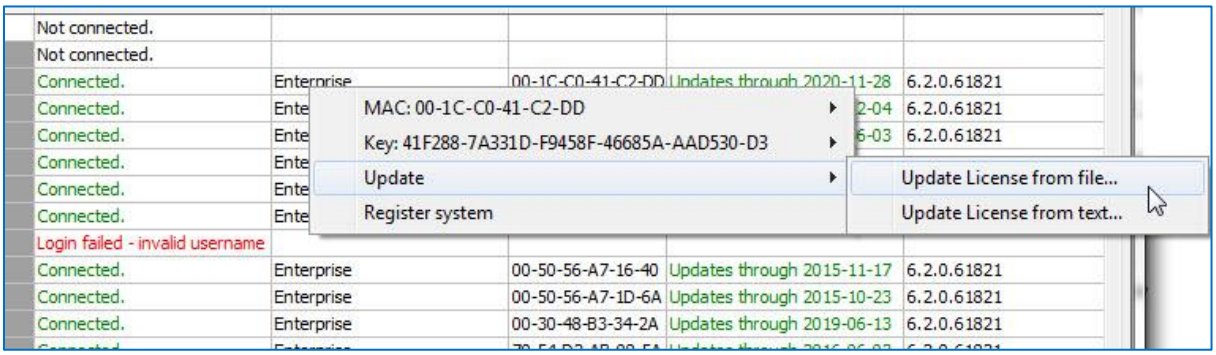

System Name
Serial Number
Connection Status
1 Enterprise - Case Managemen Not connected.
2 ev Legacy Server 3 Not connected.
3 exacqVision Acti Server 38-60-77-9C-31-56 Connected.
Model: Software
Serial: 70-54-D2-AB-08-5F
Register system
Copy to clipboard
9 exacqVision Edge Server - Axi 00-40-8C-CE-4D-95 Login failed - invalid username
10 exacqVision Ganz Server EVA1.0ServerOVA Connected.

- To view a MAC address and license key for a system and copy it to the clipboard, right-click its information in the License, MAC Address, or Subscription column for that system and select Copy to Clipboard (select the right arrow if necessary to see that option). You can then paste the information into an email or other applications.

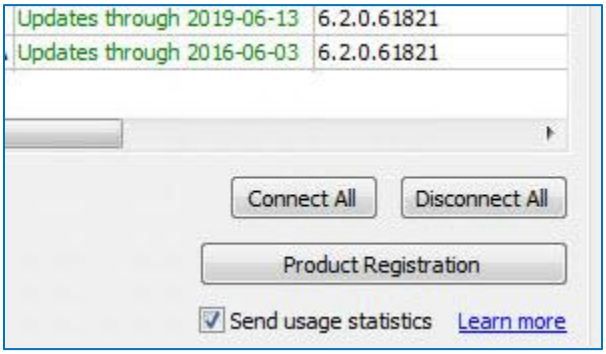


- To update a license key for a system, right-click its information in the License column, select Update, and select an option. Update the License from File allows you to browse to a .KEY file that contains license information and click Open. Update the License from Text allows you to type the license key manually and click OK.

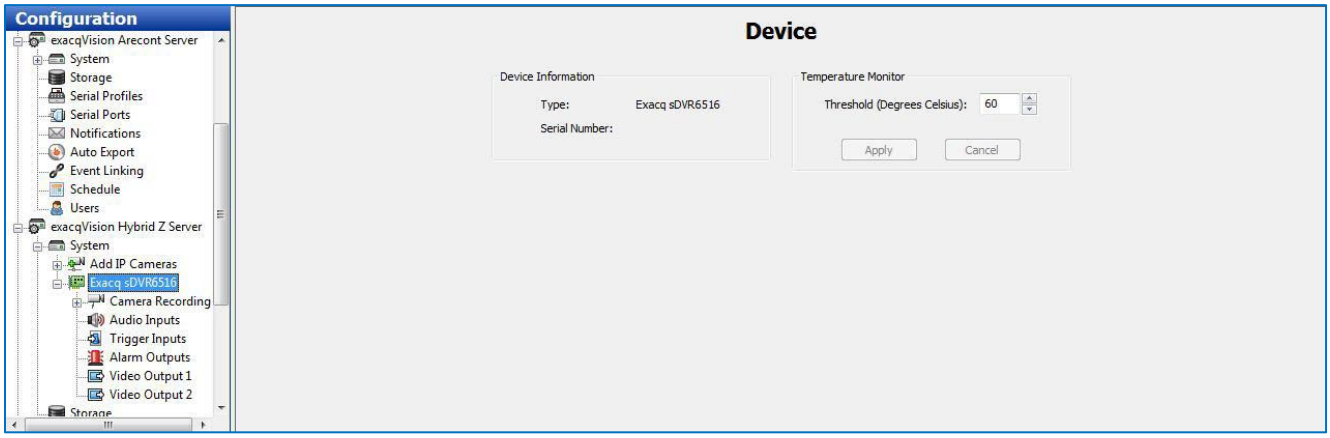
  NOTE: Alternatively, you can click Import Licenses at the bottom of the page to enter multiple licenses from a .CSV file, or click Export Licenses to compile all listed licenses into a .CSV file to import into another client.



- To view additional version information for a system, right-click the information in the Version column for that system.
- To view additional information about Alarm or Motion status, right-click the word while it appears in the Status column.
- To view a general product registration page, click Product Registration.
- Send Usage Statistics provides anonymous and non-sensitive information to the manufacturer about how cameras and exacqVision features are used on the system.



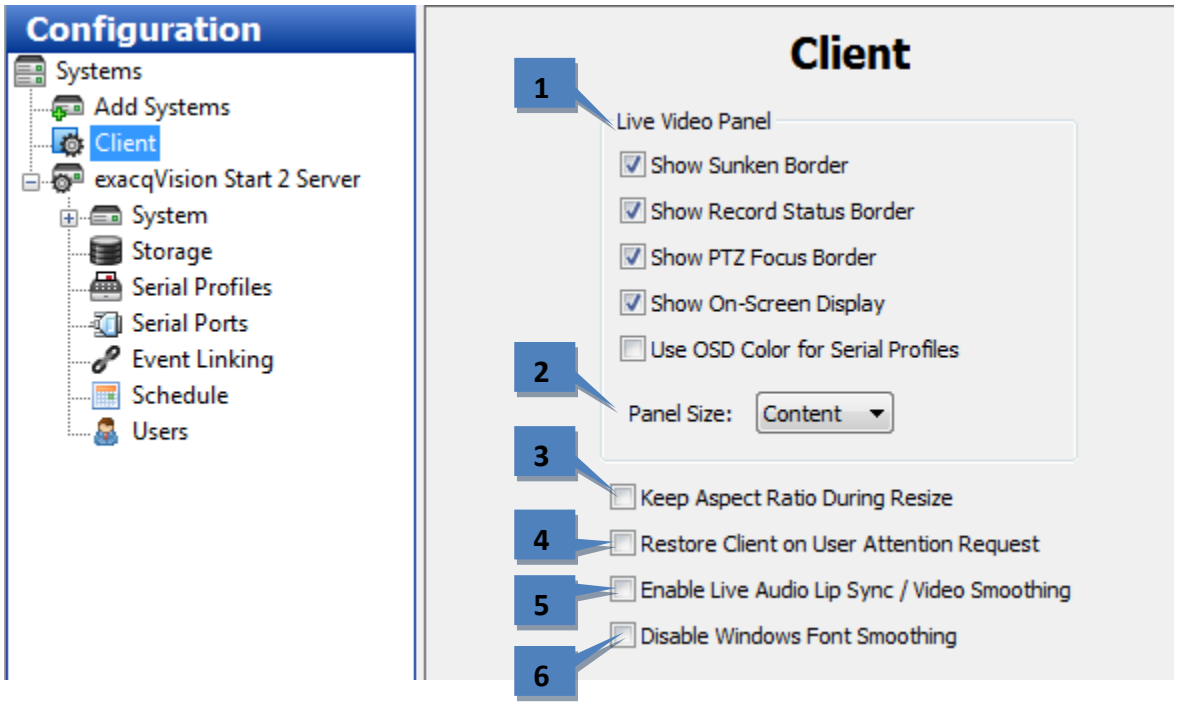
Device



The Device page provides information about the compression board installed in exacqVision hybrid video servers that manages the analog video cameras connected to the systems. If a compression board is installed in the system, the Device Information field displays the eDVR Device Type and Serial Number.

You can also set a temperature threshold that can be linked to an event action using the Event Linking page.

Client



The Client page allows you to customize your client based on your personal preferences.

1. The Live Video Panel section allows you to disable the colored borders that indicate motion or alarm recording or PTZ focus in Live mode. You can also disable sunken borders to decrease the separation between video windows (this can be useful if you want to place two separate video streams from a single panoramic camera next to each other and view them a single, nearly seamless video window).
2. Panel Size allows you to choose the aspect ratio of live video windows. The following options are available:

    - **Content** displays the video windows in the aspect ratio of the video as it is captured. If the majority of the displayed video is captured in 16x9, all video windows are shown 16x9.
    - **Window** uses the aspect ratio of the entire Live Page to determine the aspect ratio of the video windows.
    - **16x9** displays all video windows in 16x9.
    - **4x3** displays all video windows in 4x3.

    NOTE: If the video windows are shown in 16x9, wide-screen layout buttons are not available at the top of the Live Page screen.

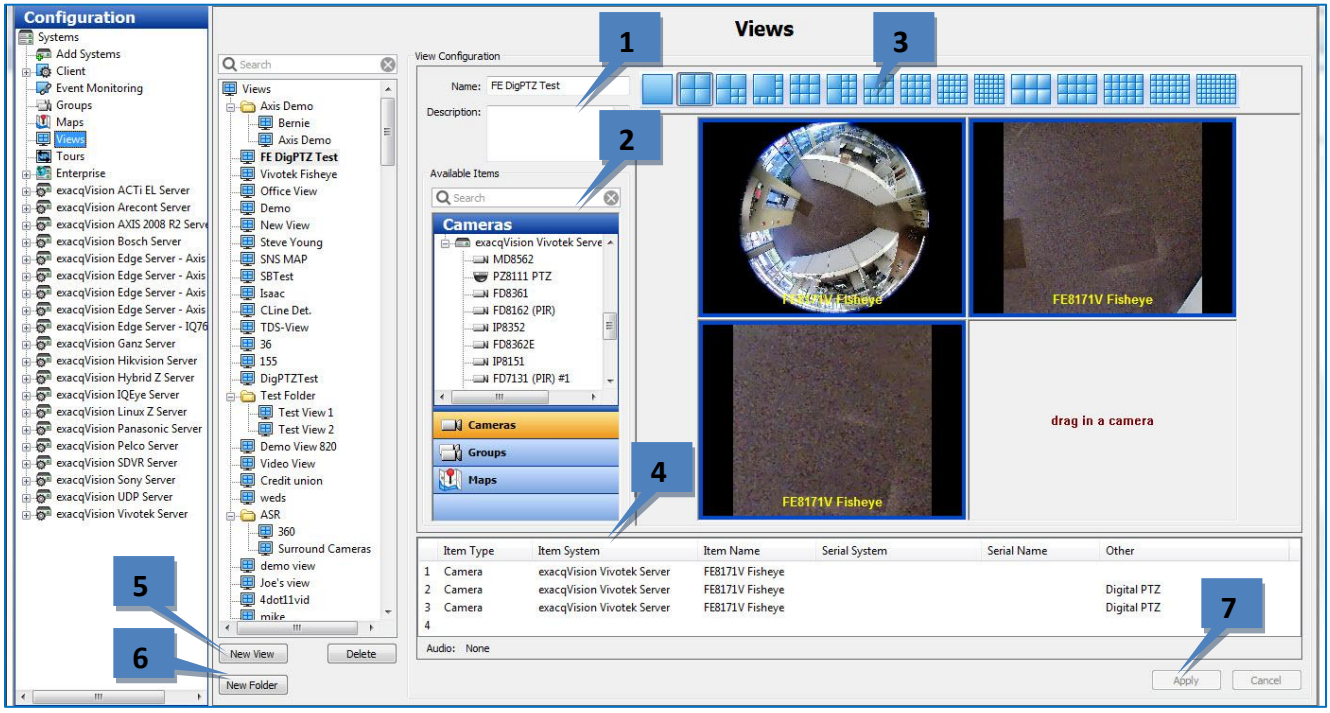
3. Keep Aspect Ratio During Resize maintains video aspect ratios when exacqVision Client is made larger or smaller.
4. Restore Client on User Attention Request displays a minimized client if an event occurs requiring user attention.
5. Enable Live Audio Lip Sync/Video Smoothing buffers up to five seconds of audio and video to ensure that they play back synchronized. This option can compensate for an intermittent video stream; however, it increases memory usage and video latency, so use it with caution.
6. Select Disable Windows Font Smoothing if fonts are not appearing as desired.

    NOTE: The Mac version of exacqVision Client also contains Use a 24-Hour Clock on the Client page.

NOTE: H.264 Deblocking (available to Administrators and Power Users) enables more detailed decompression on video displayed in exacqVision Client. Deblocking is available only on certain cameras. It is recommended that you select By Device, which enables deblocking on all cameras that stream deblocked video. Selecting Enabled will cause exacqVision to always perform de-blocking decompression even if the video stream is not actually deblocked. Enabling deblocking can reduce the maximum displayed frame rate, so use it with caution.

Views

The Views page allows you to create and name combinations of cameras, groups, and maps that can be displayed with a single click.

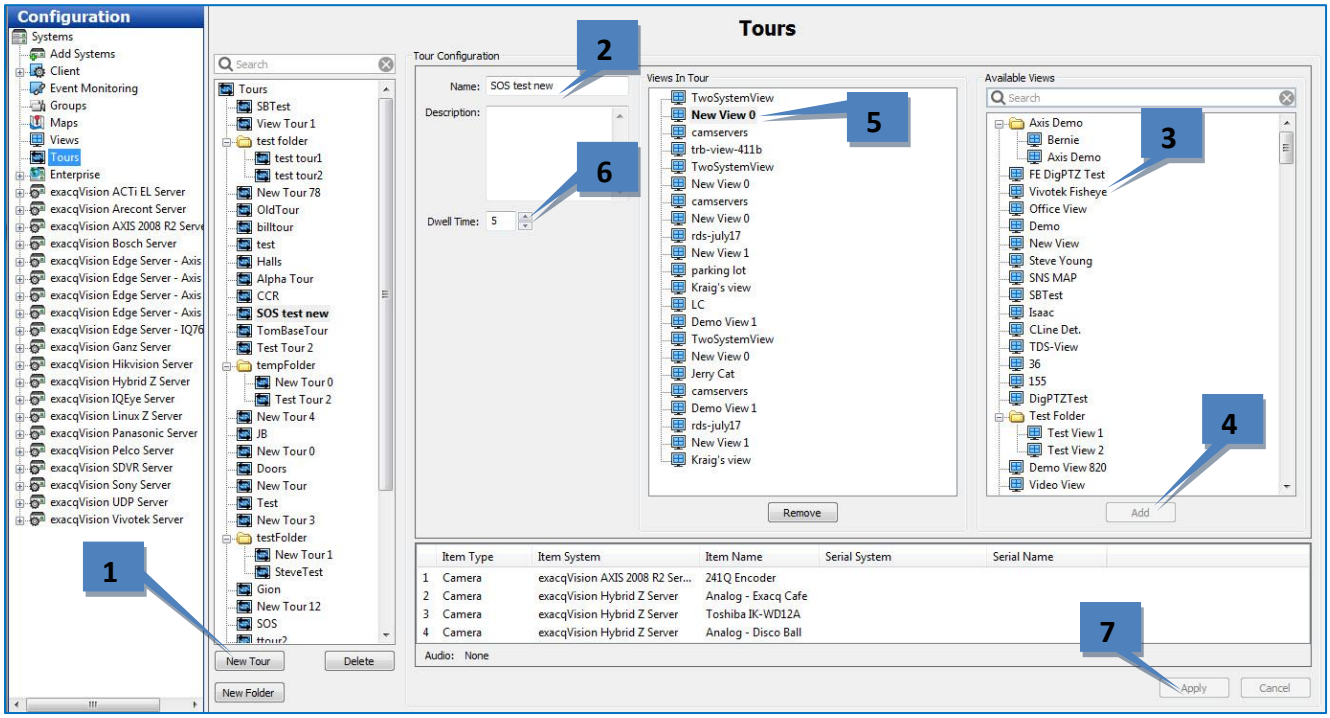


The Views page allows you to do the following:

1. Change the name or description.
2. Search for cameras, groups, and maps and drag and drop them into the view.
3. Select a video window configuration.
4. View a list of items in the view and the system that they are associated with.
5. Create a new view.
6. Create a new folder. You can then drag and drop existing views into the folder.
7. Click Apply after you have finished configuring the view as desired.

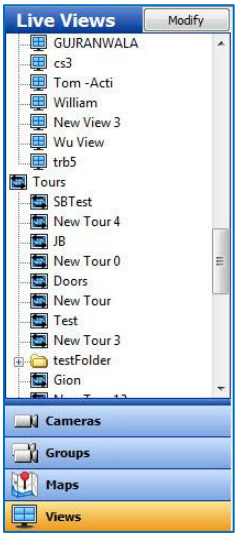
Tours

The Tours page allows you to configure an automated tour of camera views.



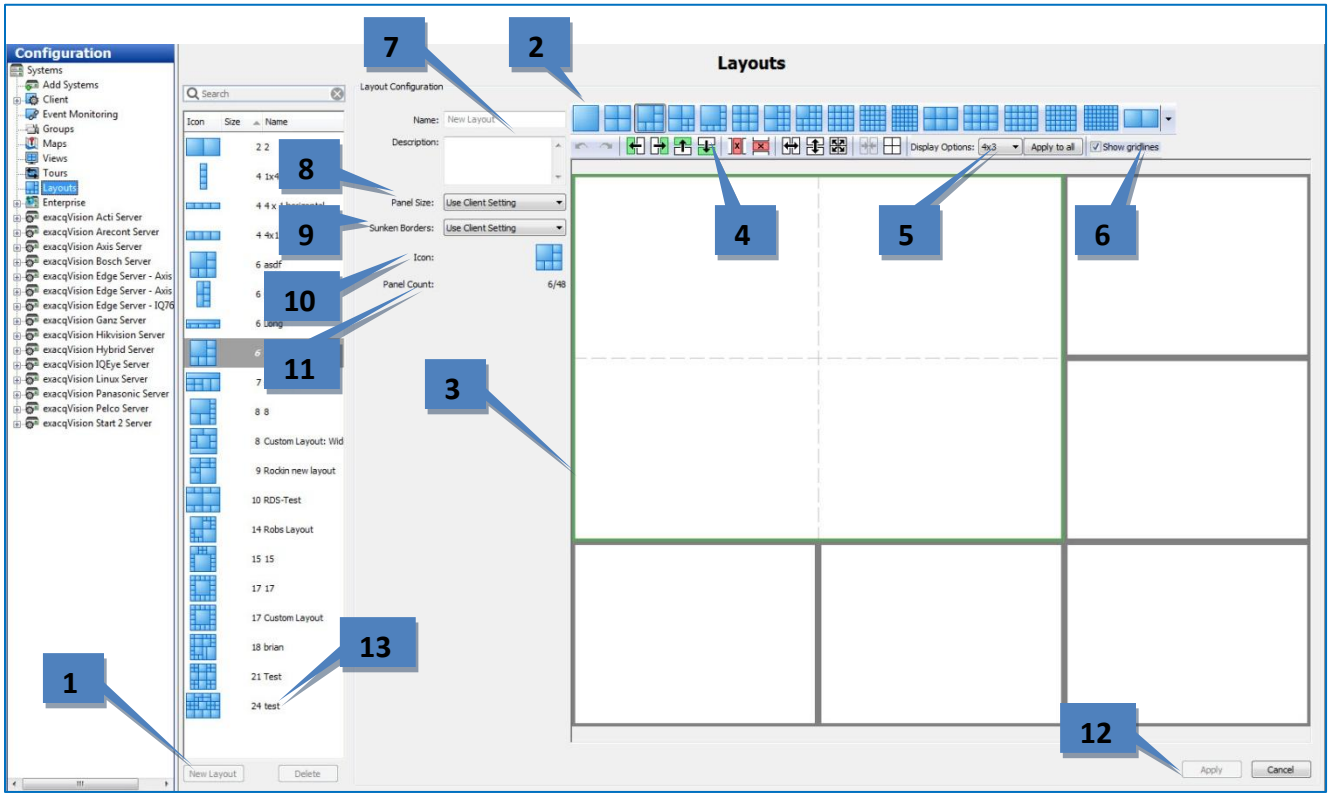
1. Click New Tour.
2. Enter a unique name and description for the tour.
3. Select a view from the Available Views list.
4. Click Add to include the view in the Views In Tour list. Repeat for additional views.
5. Drag and drop views to change their order in the list.
6. Select a Dwell Time. This is the amount of time, in seconds, that each view will be displayed.
7. Click Apply to save the camera view tour.

You can now activate the tour by clicking its name in the Live Views section of the site tree.



Layouts

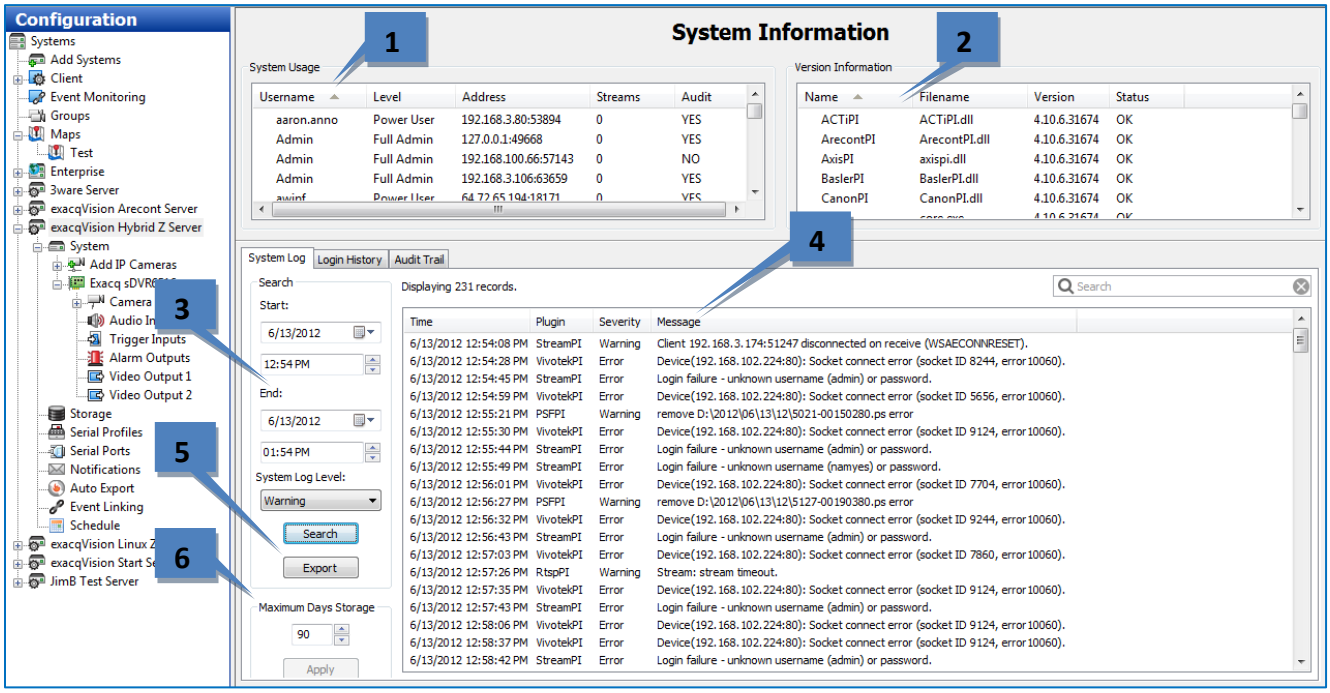
The Layouts page allows you to create custom video window layouts for use on the Live Page. Several basic layouts, such as 1x1, 2x2, and so on, are already available by default. Layouts are limited to a maximum of 48 panels. You can save and search camera views in a custom layout the same way as with default layouts.



To create a custom video window layout, complete the following steps:

1. Click New Layout.
2. Select the layout button that most closely resembles the custom layout that you want to create.
3. Select a video panel, or hold the Shift or Ctrl keys and select multiple video panels. Selected panels are outlined in green.
4. Select any of the configuration buttons. (These buttons are not activated until you select one or more panels.) Hover the cursor over each button to view a description of their functions. You can add or delete columns or rows, merge or split panels, and more. You can also merge two windows by clicking a corner of a panel and dragging it.
5. For each selected panel, select the display option (4x3 or 16x9) that corresponds to the type of camera that you would normally display in the panel. To activate the selected display option on all panels, click Apply to All.
6. Select Show Gridlines to compare the size of smaller windows within a larger window.
7. Enter a name and description for the custom layout.
8. Select the size of the entire layout from the Panel Size drop-down list. You can choose 4x3, 16x9, or use the setting automatically selected by the client based on the client window.
9. Select whether you would like to show or hide sunken borders, or automatically use the setting selected on the Client page.
10. The Icon indicator shows what the layout icon will look like on the Live Page.
11. Panel Count shows how many panels are included in the layout out of the maximum (48).
12. Click Apply to save the layout.
13. To edit a custom layout, select it from the layout list.

System Information



The System Information page displays information about users that are currently logged into the system, plugin file version information number and status, and the system log. This page is displayed when you click on the system name in the Configuration tree.

1. System Usage displays the users that are currently logged in, the user's access level and IP address, and the number of streams being viewed.
2. Version Information displays the version numbers for each exacqVision system file. This information can be useful when contacting technical support.
3. To view the system log, select the start and end date and, select the type of messages you want to see from the Level drop-down list, and click Search. All messages that meet the search criteria are listed.
4. To sort the list, any of the column titles.
5. To view the system log with a text editor, click Export and save the file. Then you can open the file from the location where you saved it.
6. Maximum Days Storage determines the maximum number of days that information is maintained in the system log.

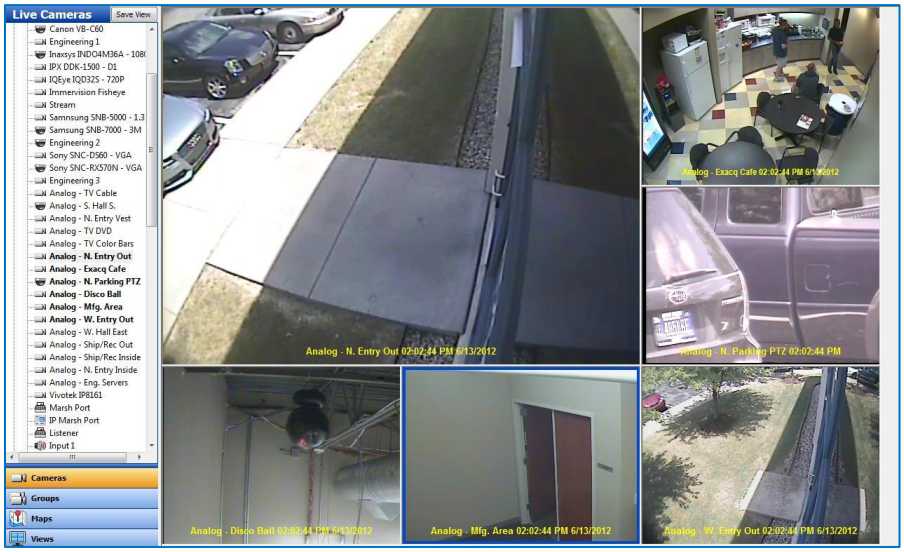
NOTE: If you cannot see all the fields and buttons on the System Log tab, drag the horizontal bar under the System Usage section up.

5 Live Page Overview

Live Page is the primary page for viewing live video.

1. **Live Page Icon.** This button opens the Live Page.
2. **Video Window Formats**. Select a video window layout. (Options vary based on settings on Client page.)
3. **Site Tree.** Browse exacqVision systems, cameras, PTZ cameras, alarms, audio inputs, and more.
4. **Navigation Pane.** Select a button to display cameras, views, and more on compatible systems.
5. **Frames per second (fps) info.** Click to cycle bandwidth, displayed fps, decompressed fps, and received fps.
6. **Date and Time**. See the current date and time on the client computer.
7. **Video Windows**. View video in the selected layout.
8. **About exacqVision Client**. View information about the client software.
9. **Information.** Open the user manual, visit the Exacq Knowledge Base, and more.
10. **Hide/Show Navigation Panel**. Expand or hide the tree. (Or press the F4 key.)
11. **Fullscreen Mode**. Enlarge the display by hiding the title and task bars. (Or press the F11 key.)
12. **Launch PTZ Controls.** Open the PTZ Control window.

Layout Panel

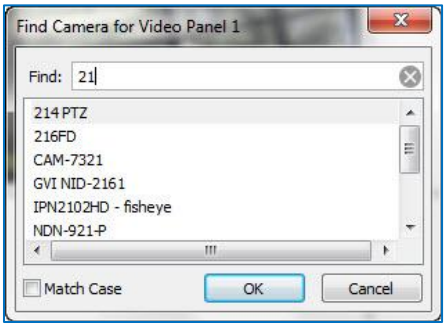

Live Cameras
Save View
Cameras
Groups
Maps
Views
Analog - N. Entry Out 02:02:44 PM 6/13/2012
Analog - Exacq Cafe 02:02:44 PM 6/13/2012
Analog - N. Parking PTZ 02:02:44 PM
Analog - Disco Ball 02:02:44 PM 6/13/2012
Analog - Mfg. Area 02:02:44 PM 6/13/2012
Analog - W. Entry Out 02:02:44 PM 6/13/2012

You change the layout of the video windows by clicking on one of the Layout buttons. When you select a layout, it becomes the new default. The system automatically fills the video windows with the cameras from your Live Site Tree in the order they are listed.

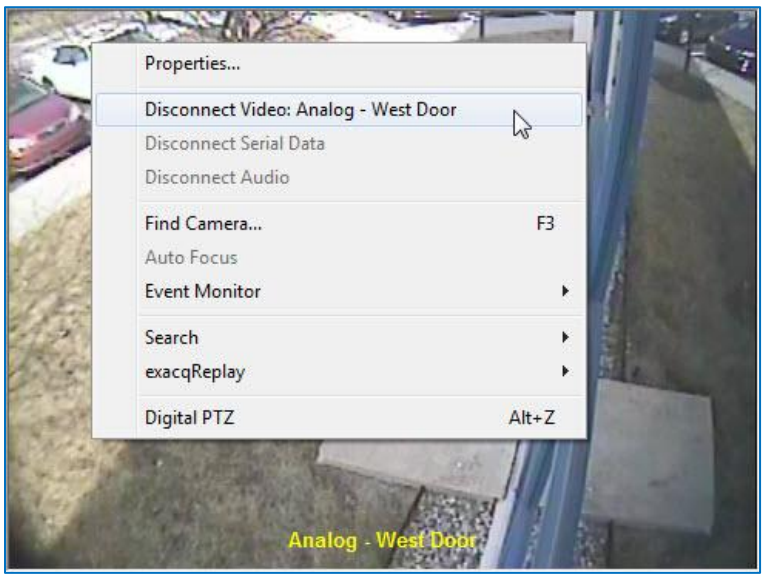
NOTE: The available Layout buttons vary based on the number of cameras connected and the width of the exacqVision Client window.

There are several methods for adding cameras to your Video View Panel.

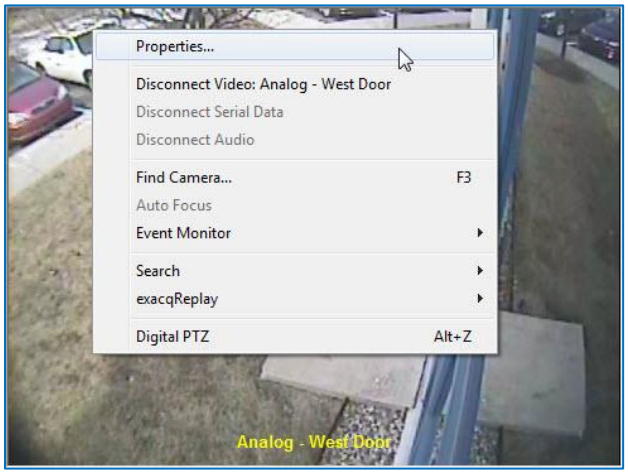
- Select a Layout button on the Toolbar.
- Double-click a camera name listed in the site tree. The system displays that camera in the upper-left video and fills the rest of the windows in order below that camera in the list.
- Drag and drop a camera from the site tree into a video window. The window can be empty or currently displaying video when you do this.
- Drag and drop a server name into the layout panel. If the layout includes six video windows, the first six cameras from the server will be displayed.
- Press F3 or the joystick button to display the Find Camera dialog. Start typing the name of a connected camera, select the camera when you locate it in the list, and click OK. This feature works best when cameras are uniquely named. For example, if camera names start with numerical characters (such as 1-Front Entrance, 2-Back Entrance, and so on), you can quickly find a camera by simply entering one or two numbers in Find Camera.



You can delete a camera from the Video View Panel by right-clicking anywhere in the square and selecting Disconnect Streaming Video from the pop-up menu. The menu also includes options for saving, copying, and printing images. (Additional features on this menu are explained in other sections of this manual.)

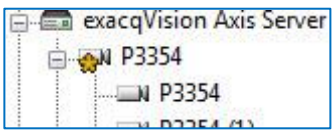


The Properties menu item allows you to access the Camera Settings page directly from Live Page. Click the OK button in the window that appears.



NOTE: To view the video window panel in the largest area possible, press Alt and Enter simultaneously on the keyboard. This combines the previously mentioned keyboard functions (F4 to hide the navigation tree and F11 to hide the title and task bars) with the F8 function, which hides the message bar, the date/time bar, and the toolbar. To reverse this mode and show all the hidden items, press Alt+Enter again.

NOTE: Some cameras configured for multistreaming have a yellow star indicator in the site tree. This indicates that the camera's streams have the same view but are configured with a different quality, frame rate, resolution, or format.

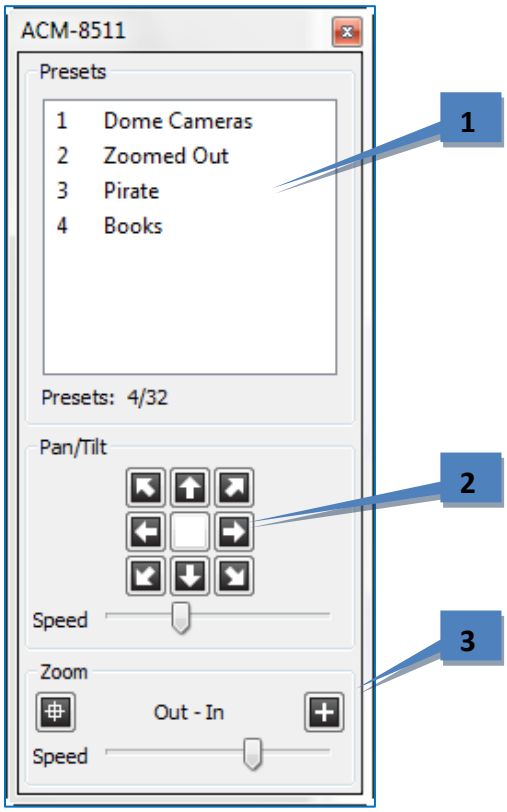


PTZ Control

To control the pan/tilt/zoom features of a PTZ camera without a joystick, move the mouse cursor over the camera's video window to display a green cross in the center of the window. When you move the cursor, arrows appear that show you which way you can pan and tilt. You can zoom in and out using your mouse wheel.

Alternatively, you can click the PTZ Control Button to display the PTZ Control panel: Click the button to access the PTZ/preset panel. This panel is available only when a PTZ-enabled camera is displayed in a video window.

The PTZ/preset panel contains the name of the camera being controlled in the title bar. You can click and drag on the title bar of the panel to move it anywhere on your screen.



1. To move a camera to a preset, click the preset name.
2. To control pan and tilt, click the arrow buttons. Adjust the pan/tilt Speed slider if necessary.
3. To control zoom, click the Out or In button. Adjust the zoom Speed slider if necessary.

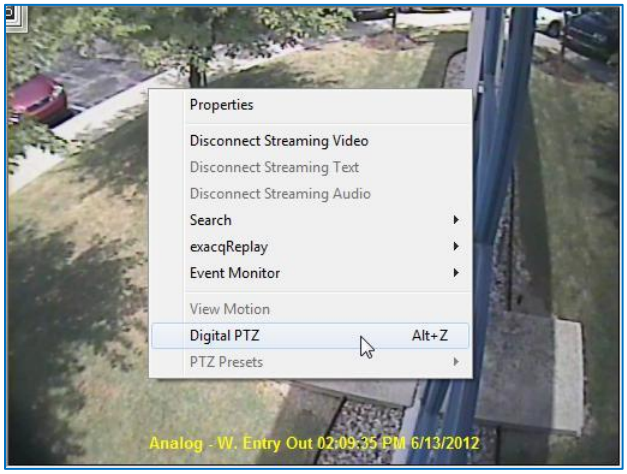
NOTE: Some cameras also provide iris and focus buttons, similar to the zoom buttons.

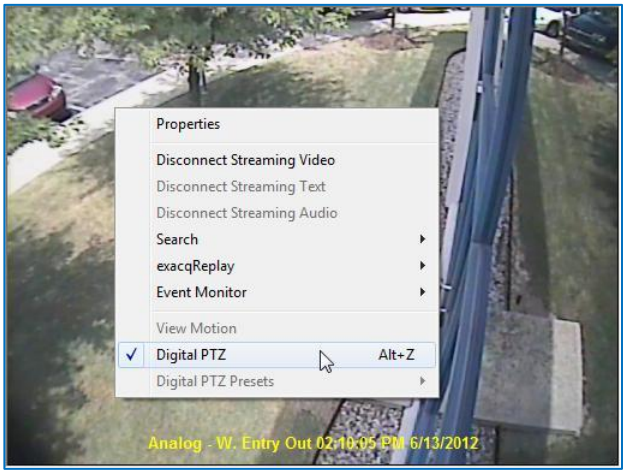
NOTE: You can alternatively control PTZ using the arrows, Page Up key, and Page Down key on your keyboard. The arrow keys move your camera to the left, right, up, and down. Page Up zooms in, and Page Down zooms out.

NOTE: User-initiated PTZ commands have a higher priority than event linking PTZ commands, and both have a higher priority than PTZ preset tours. If two or more of these types of PTZ commands occur simultaneously, the command with the highest priority occurs and the other commands are ignored for the amount of the Resume Time configured in the PTZ Settings window available through the camera's setup page.

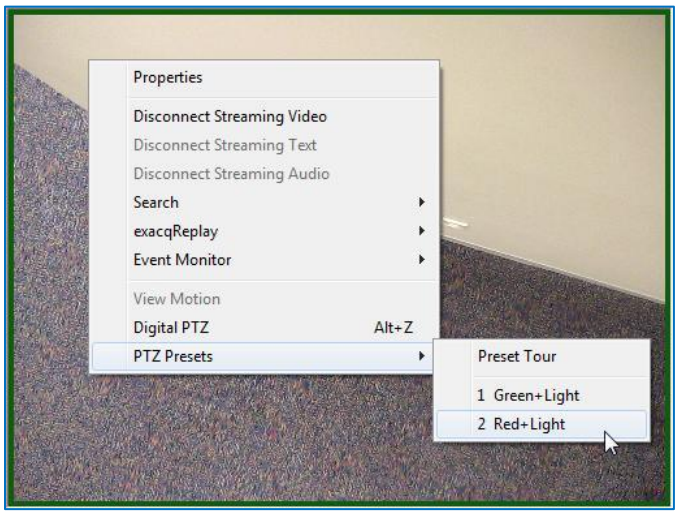
Even without a PTZ camera, digital PTZ allows you to zoom in and pan around an image (if digital PTZ has not been disallowed during setup). To enable digital PTZ, right-click the video window and select Digital PTZ.

NOTE: On supported fisheye-enabled cameras, Digital PTZ is replaced by a Fisheye menu that can be used to de-warp video.





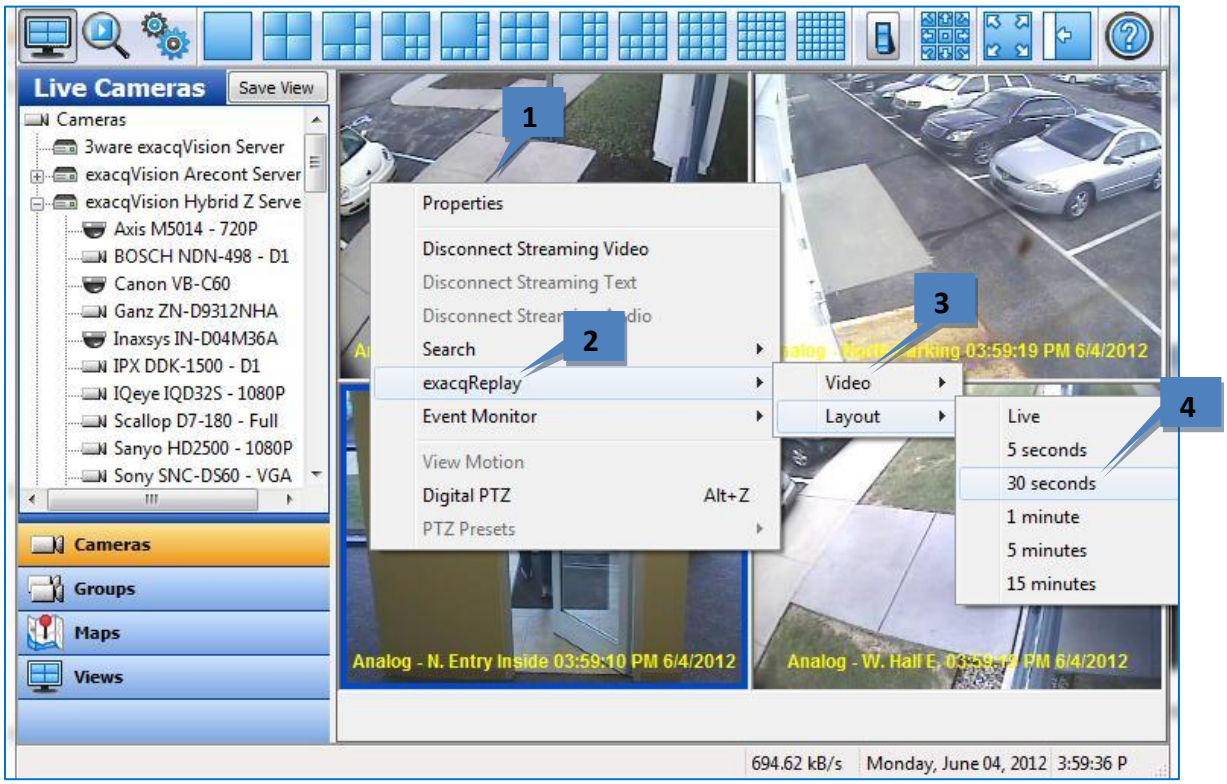
For directions on how to set up a Preset button, the “Camera Settings” section of this manual. In addition to calling presets using the PTZ/preset panel, you can use your mouse to access the PTZ presets by right-clicking anywhere in the camera’s video window, selecting PTZ Presets, and then selecting the name of the preset.



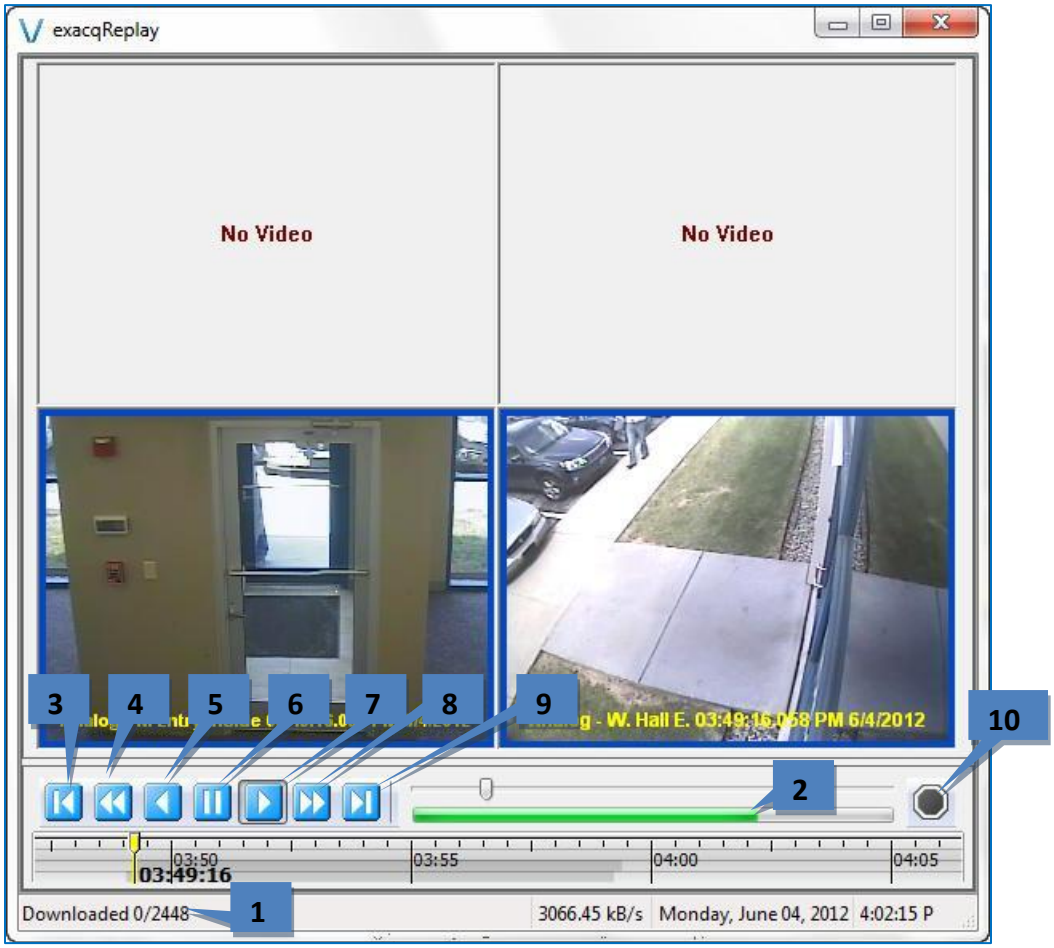
exacqReplay

exacqReplay allows you to quickly replay a limited amount of recorded video from a single camera or all cameras that are currently being viewed. You can review the most recently recorded video in increments of 5 or 30 seconds or 1, 5, or 15 minutes. To do this, complete the following steps:

1. Right-click the camera's video window.
2. Select exacqReplay from the pop-up menu.
3. Select whether you want to replay video from the selected video window or from all windows in the current layout.
4. Select the desired time increment.



If video was recorded in the selected time period, the exacqReplay window opens and the video is downloaded.



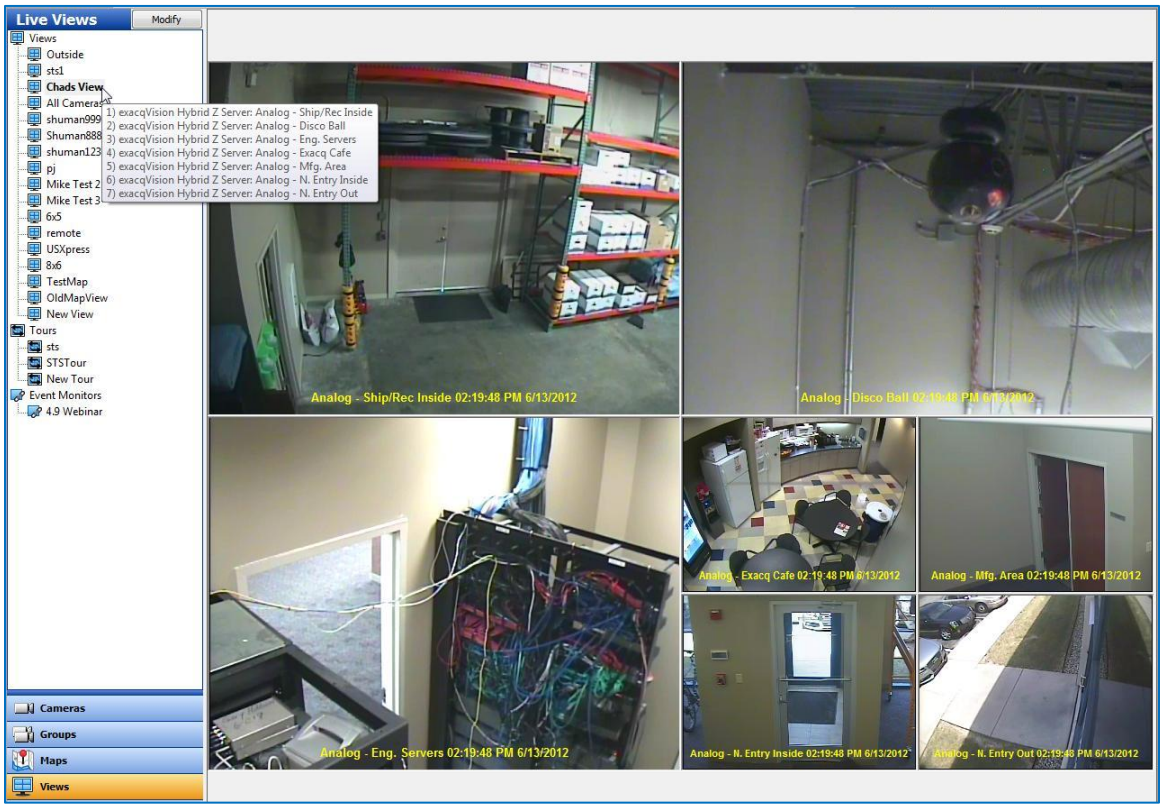
1. The number of downloaded frames and total frames in the video segment are displayed in the status bar.
2. The green bar tracks the download progress. You can play and scrub through video that has been downloaded.
3. This button allows you to play video backward one frame at a time.
4. This button allows you to play video in reverse fast (double) speed.
5. This button allows you to play video in reverse in normal speed.
6. This button allows you to pause video play.
7. This button allows you to play video forward in normal speed.
8. This button allows you to play video forward in fast (double) speed.
9. This button allows you to play video forward one frame at a time.
10. This button allows you to stop the video download in progress.

NOTE: Live Page also allows you to run a quick search of video from the currently selected window or from all displayed video windows. To run a search from Live Page, right-click a video window, select Search from the pop-up menu, and select whether you want to search for video from the selected window or from all windows in the current layout. This procedure opens the Search Page with results from the last two hours from the selected camera or cameras. For more information on the Search Page and other methods for searching for video, see the "Search Page Overview" chapter.

Camera Views

To display a view in the live video windows, click the Views button in the Navigation Pane.

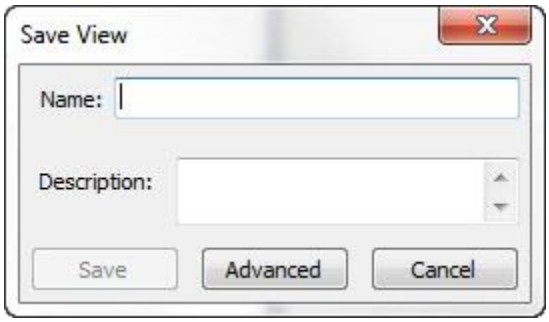
This displays all configured views and view tours in the site tree. Select the view to display video from the cameras saved in the view. Notice how the camera names and systems included in the view are displayed when you hover over the view name in the site tree.



My Event Monitors is a list of profiles created on the Event Monitoring page. These profiles normally display a default view or tour. Whenever an event associated with the profile occurs, the view or tour selected as the Action Target on the Event Monitoring page is automatically displayed in place of the selected view.

You can also create views directly from the site tree. To do this, select a Layout button in the Live mode and drag the cameras, audio, and POS data into the video windows, then click the Save View button at the top of the site tree.

This opens the Save View window. Enter a name and description and click Save.

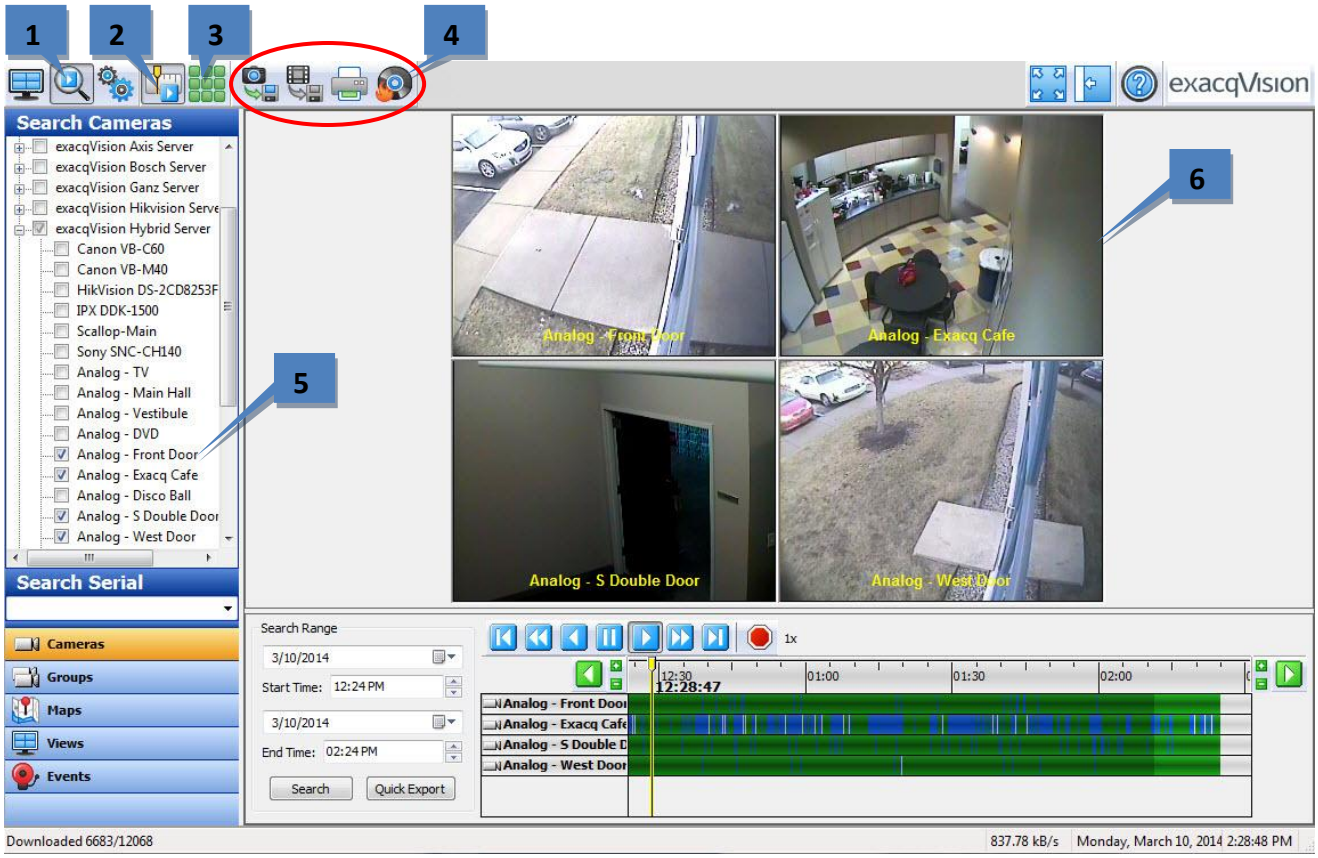


You can further configure a view by opening the Views page in one of the following ways:

- In the Save View window, click Advanced.
- Select a view in the Live Views panel and click Modify.

For more information about the Views page, see the “Views” section in the Config (Setup) Page Overview chapter.

6 Search Page Overview

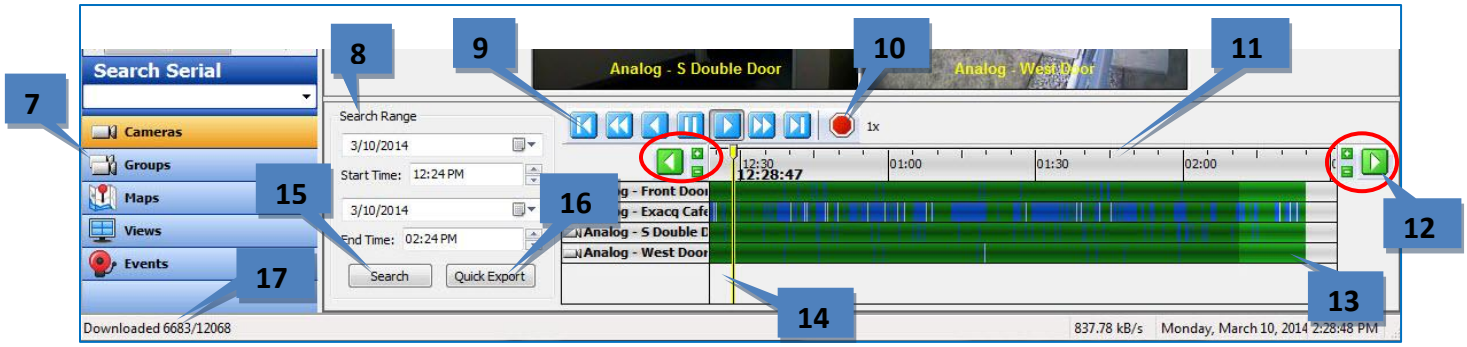


The Search Page allows you to search for recorded video, events, and other data.

1. **Search Page.** This button opens the Search Page and additional Search buttons.
2. **Timeline Search Mode.** This mode allows you to search for video from multiple cameras in a specified time range.
3. **Thumbnail Search Mode.** This mode allows you to search for video from one camera by viewing thumbnail images captured at specified intervals in a time range.
4. **Export Buttons**. These buttons, available only in Timeline Search Mode, include Save Picture, Export Video, Print Picture, and Burn Saved Files to CD or DVD.
5. **Camera Selection Tree.** This allows you to select cameras, audio, or data sources to search.
6. **Video Playback Window.** Video is played back here.

   NOTE: When Thumbnail Search Mode is selected, the Smart Search and export buttons are replaced by video window layout buttons as described in the “Live Page Overview” section.

The rest of the Search Page is described on the following page.

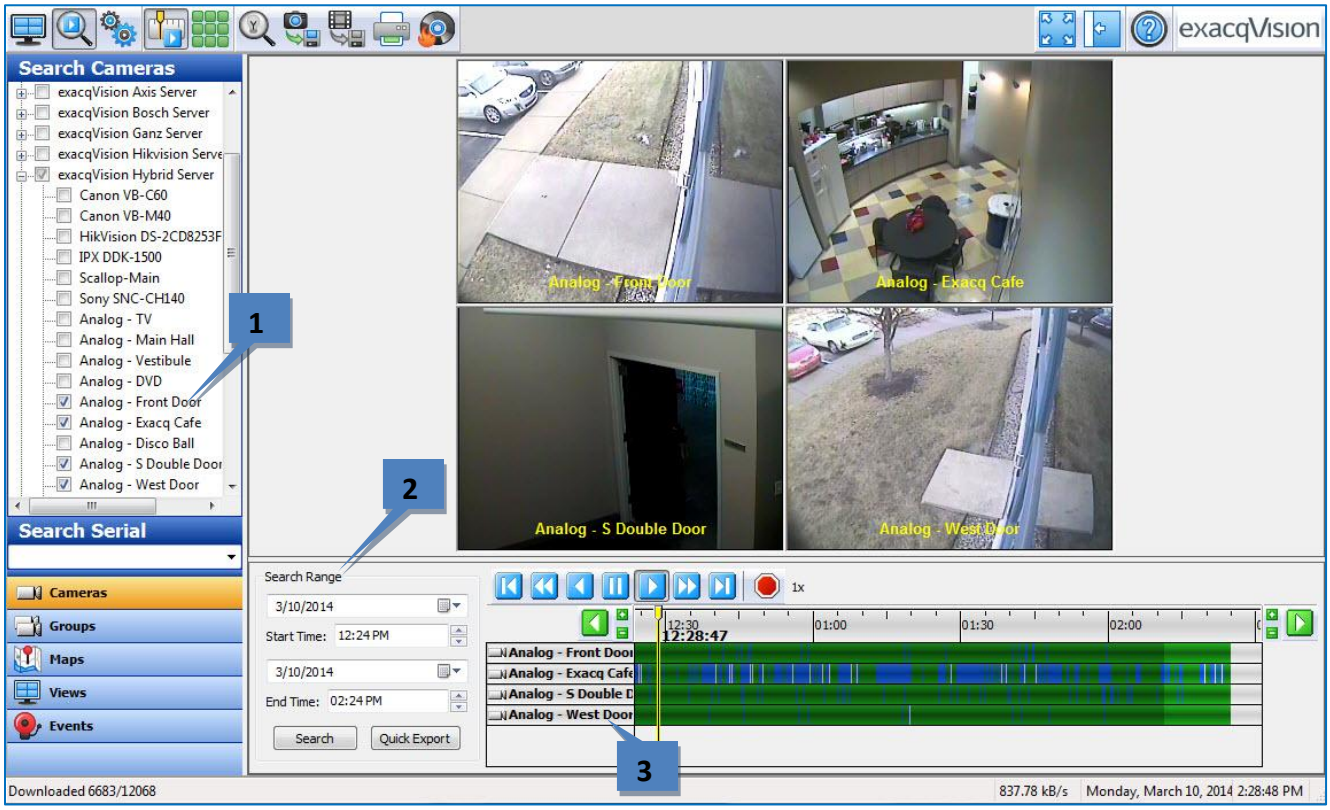


7. **Navigation Pane**. Display lists of individual cameras, camera groups, maps, views, or events to search for.
8. **Search Range**. Select a date and time for the start and end of the search period.
9. **Video Playback Controls**. Standard playback controls (left from right): step back, reverse 2x, reverse normal speed, pause, play normal speed, play 2x, step forward.
10. **Stop Download Button.** Click this button to stop downloading video. Note that the download status indicator disappears when you press this button.
11. **Video Timeline**. To expand or shrink the timeline, click the plus and minus buttons (or scroll your mouse wheel while the mouse cursor is on the timeline). To change the start or end time of the timeline, click the green left or right arrow buttons.
12. **Shift and Zoom Buttons.** Click the left or right arrows to shift the video timeline earlier or later. Click the Zoom In (plus) or Zoom Out (minus) buttons to decrease or increase the range of the video timeline.
13. **Recorded Video Bar**. These color-coded bars represent video that has been recorded.
14. **Video Cursor.** This shows where in the timeline the displayed video was captured.
15. **Search Button**. Click Search to find video based on the search settings.
16. **Quick Export**. This allows you to export video from the entire search result. If the entire result has not yet downloaded, the export occurs in a separate video window. (Serial data cannot be included in a quick export.)
17. **Download Status**. This shows you how many frames have been downloaded and the total number of frames that meet the search criteria.

Searching for Video and Other Data

Timeline Search Mode

To perform a standard timeline search for video and other data, complete the following steps:



1. In the camera or view tree, select one or more sources (cameras, audio inputs/outputs, POS, and so on). To search every source on an exacqVision server, check the box next to the server in the Camera Selection Tree (and then deselect any sources individually if desired). You can also select individual sources using the check boxes next to each camera.

2. Select the date and time you want to search. Click Search.

   NOTE: If the client computer and a connected server are located in different time zones, the Client Time and Server Time options are also available. Search result listings are applicable to the selected time zone, and the time offset between the time zones is shown in parentheses.

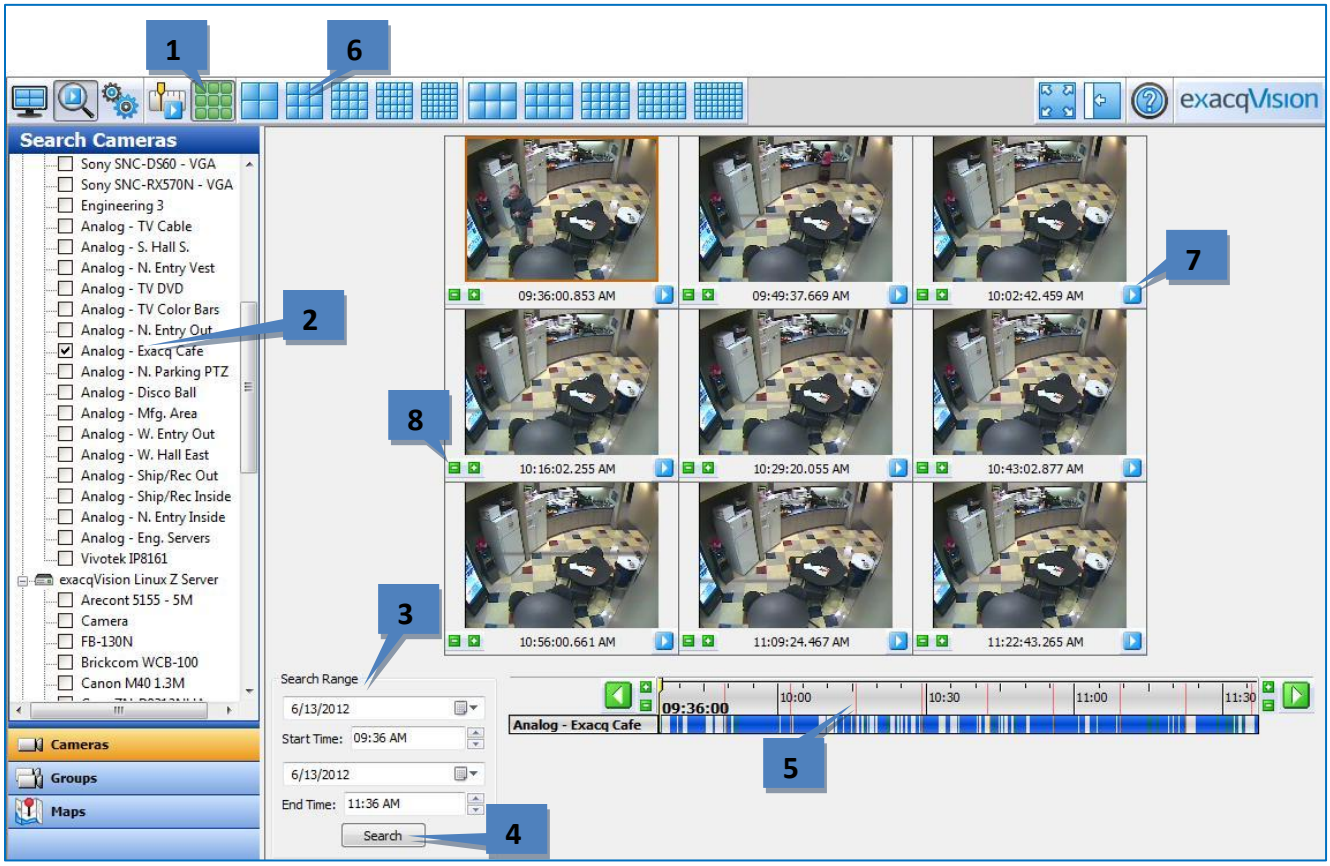
3. When your search is complete, the camera names selected appear under the timeline with color-coded recording bars representing recorded data. A color legend for the recorded video bars is located below the Search Range area; if you cannot see it, click the horizontal bar between the video window and the search results and drag it up.

NOTE: Alternatively, you can perform a quick search on the Live Page by right-clicking a video window, selecting Search from the pop-up menu, and selecting whether you want to search for video from the selected window or from all windows in the current layout. That procedure opens the Search Page with results from the last two hours from the selected camera or cameras.

Thumbnail Search Mode

Thumbnail search mode allows you to visually scan for video from a single camera by viewing thumbnail images captured at specified intervals in a time range.

NOTE: Thumbnail Search Mode is available only when connected to an exacqVision system running exacqVision Server version 4.9 or later.

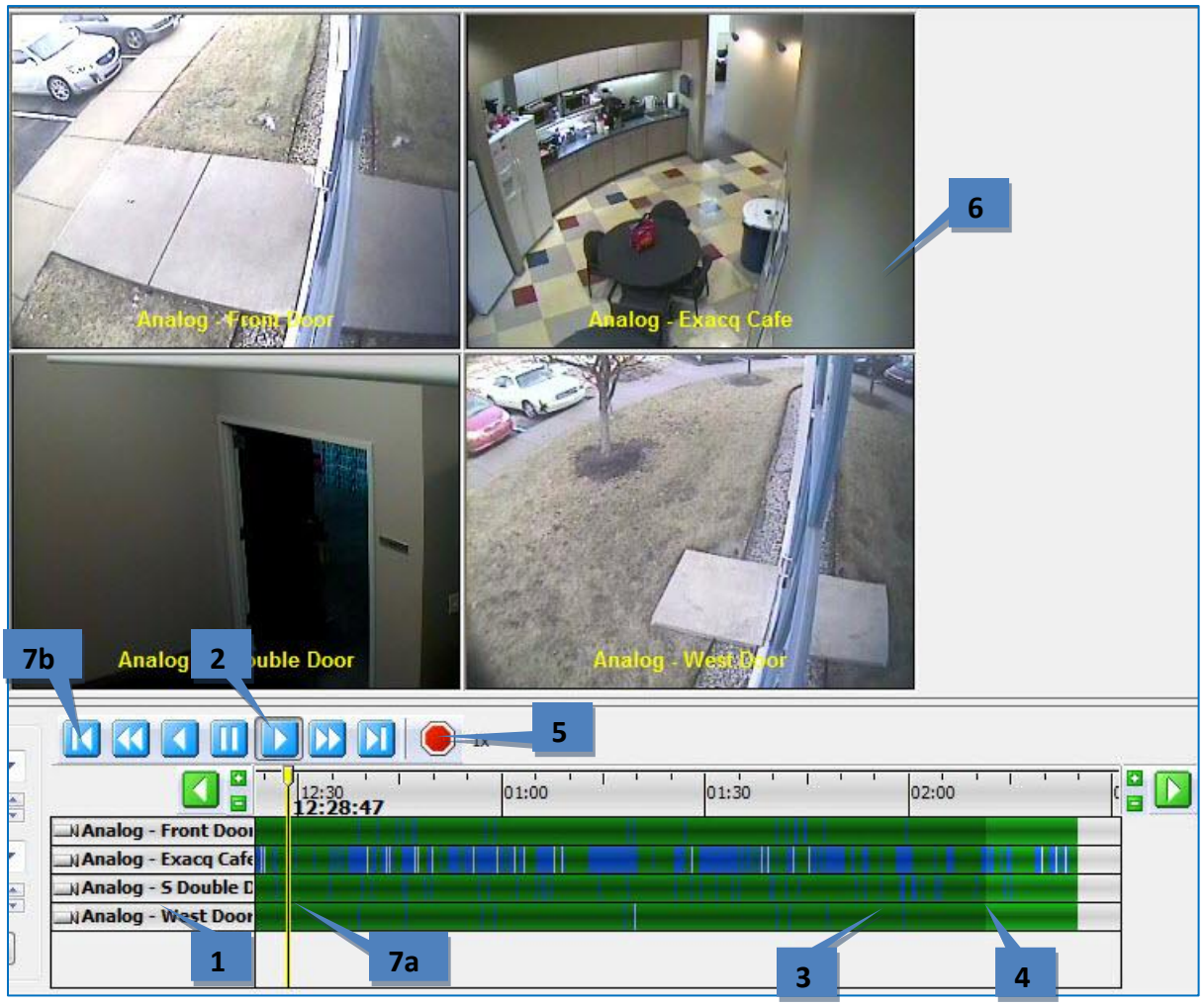


To perform a thumbnail search, complete the following steps:

1. Click the Thumbnail Search Mode button.
2. Select one camera from the camera selection tree.
3. Select a search range.
4. Click Search to display thumbnails of images captured at constant intervals during the search period.
5. The capture time of each thumbnail is represented on the timeline by vertical orange lines.
6. To display more or fewer thumbnails, select a video window layout.
7. To play video starting at a thumbnail image, either double-click the video window or click the play button under the image. If you immediately return to the Thumbnail Search Mode, the same thumbnails should be displayed.
8. To decrease the search range, click a Zoom In (plus) button in a video panel. To increase the search range, click a Zoom Out (minus) button in a video panel.

   NOTE: Each video panel has a Zoom In and Zoom Out button. The thumbnail associated with the selected button becomes the center point of the increased or decreased search range.

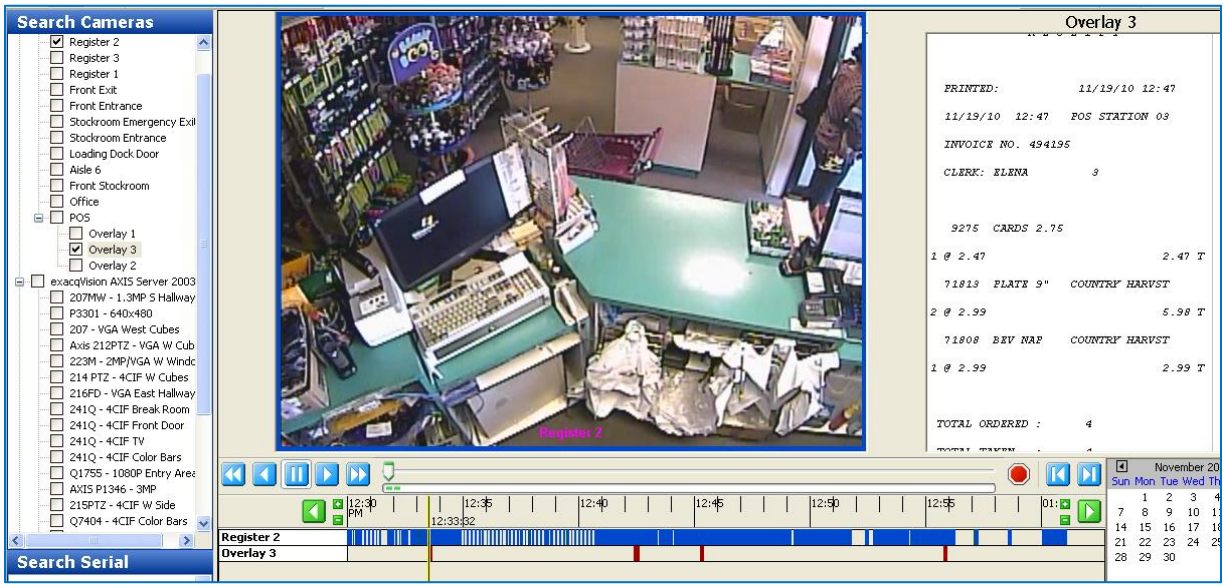
Video Playback



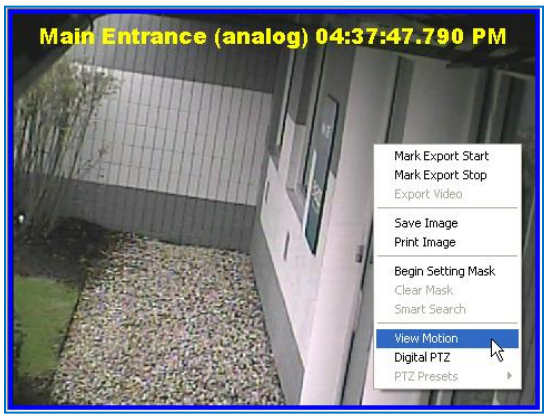
To play back video, complete a search as described in the previous section and complete the following steps:

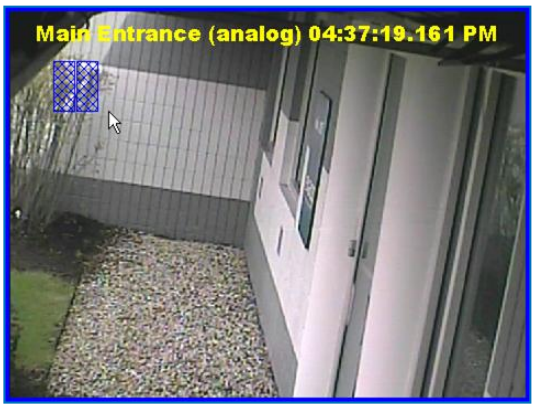
1. By default, all searched cameras are selected for video playback. To deselect a camera, click the camera name. To select a removed camera for playback, click its name again.
2. Click the play button to start displaying video at the beginning of the timeline.
3. To play video starting at another point on the timeline, double-click a recorded video bar in the appropriate location under the timeline. Or, you can click once on the recorded video bar and then click the Play button.
4. The recorded video bars change color show how much of each camera's video has been downloaded. To clear the downloaded video, right-click the timeline and select Clear All Cache or Clear Selected Item(s) Cache
5. To stop video download, click the Stop button. All video downloaded before you pressed the Stop button can still be viewed.
6. To display a single camera, double-click its video playback window. To return to the multi-camera view, double-click the remaining video playback window.
7. After the download has started, you can scrub back and forth through the video using the cursor (7a) or video playback controls (7b). You can quickly scan the video by dragging the cursor to the left or right or by pressing Enter or Backspace on the keyboard. (Enter and Backspace play every frame of video as quickly as the system hardware allows, unlike the normal Play and Reverse buttons, which play video at actual speed even if frames must be skipped to do so.)

When you play back video associated with POS data, any associated video is displayed in sync with the POS overlay data, as shown in the following figure. Notice the data displayed on the right for the transaction that was just completed in the video window. If you searched from more than one serial device, data from each device is displayed on separate tabs. Unprintable characters are automatically deleted from the serial data display.



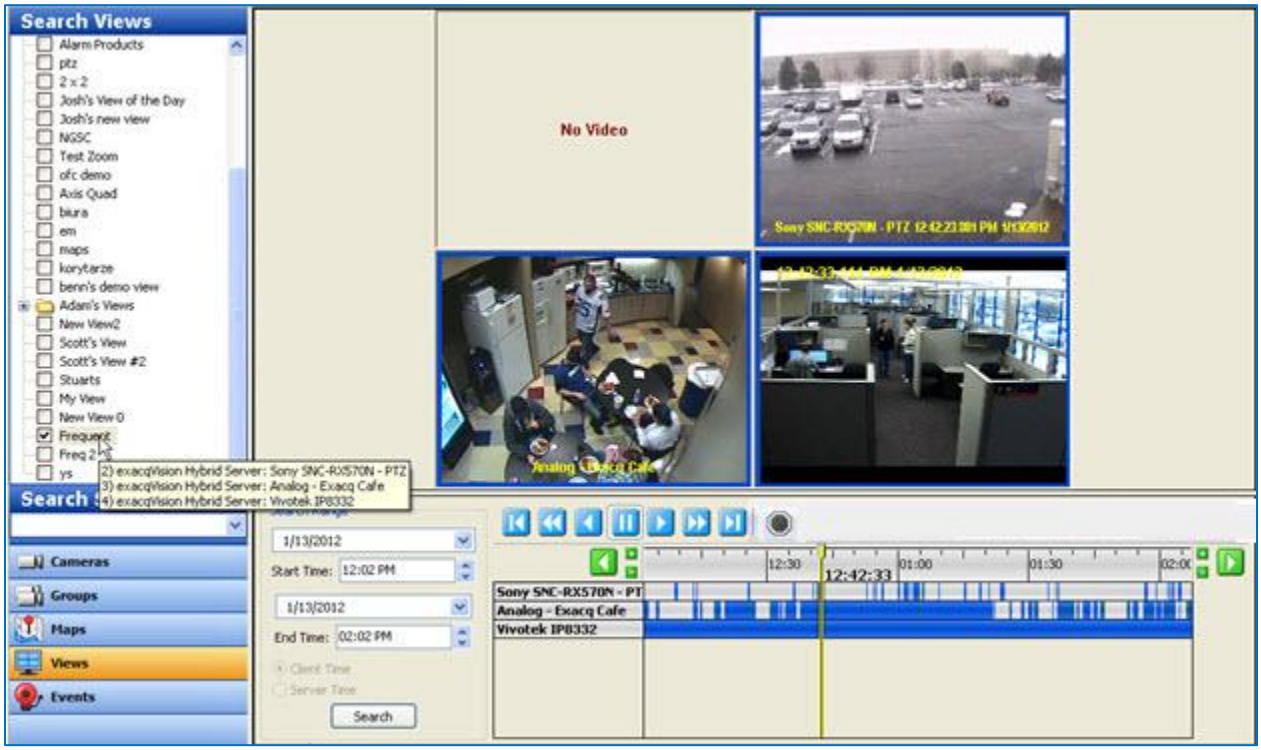
In some cases, wind or some other invisible motion sets off the camera. On an analog camera, you can highlight the motion that triggered the recording to identify the cause by right-clicking anywhere in the playback window and select View Motion. Blue motion boxes mark the area where the motion occurred. When you want to remove the motion boxes, right-click in the Video Playback window again and select View Motion to remove the checkmark. **NOTE:** This feature is not available on most IP cameras.





Searching Views

You can also search for video recorded on all cameras in a specific view.



Select Views from the Navigation Pane, and then select the View you want to search by clicking the appropriate checkbox. Select the date and time you would like to search by using the calendar and Start Time field, and then click the Search button. All of the cameras in the View are then displayed in the Video Playback window. To view the names of all cameras in the View, place the cursor over the view's entry in the tree.

Search Serial

The Search Serial drop-down list contains any key words and rules associated with a profile configured on the Serial Profiles page. If the key word or rule is linked to an event on the Event Linking page, you can search for the event using Search Serial.

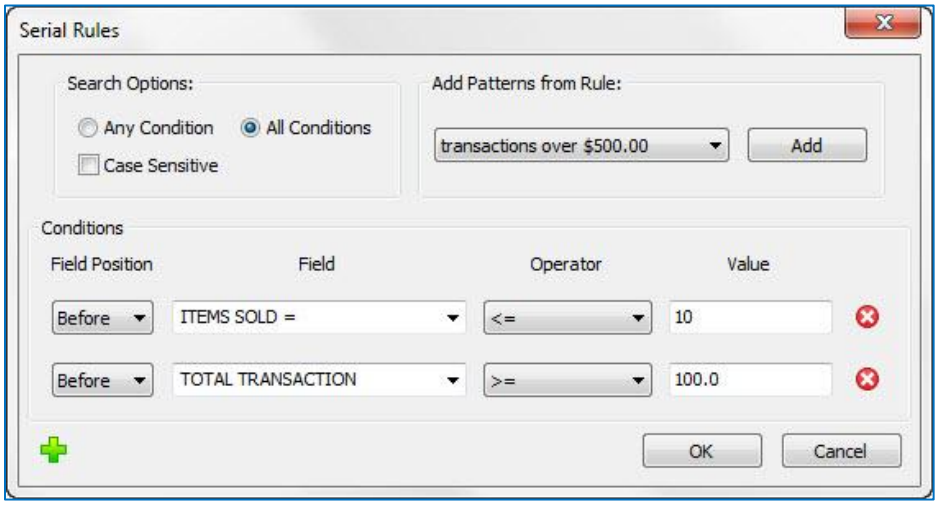
NOTE: If you do not see the Search Serial drop-down list, make sure that you haven't selected the Events, Bookmarks, or Cases button from the Navigation Pane.

Following is an example of how Search Serial could be used:

1. Suppose you have a cash register connected to an exacqVision server, and you want to be able to search for video of all tobacco purchases at that register.
2. Use the Serial Profiles page to create a profile called Register 1. Also, add and enable a Key Word "tobacco."
3. On the Event Linking page, create an Event with a type of Serial Profile or Serial Port. Select "Register 1 – tobacco" as the source, Record Video as the action, and the camera pointed at Register 1 as the target.
4. On the Serial Ports page, add the register as a POS device using the Register 1 profile.
5. On the Search Page, select the POS device from the tree and the associated camera.
6. Select "tobacco" from the Search Serial drop-down list.

7. Select the desired time range.
8. Click Search. All instances of "tobacco" that occurred in the POS data on the register during the time range are shown on the timeline in red. The associated video is shown in blue.
9. You can now play back the video and associated POS data side-by-side.

If you select a rule from the drop-down list, you can click the pencil button to open the Serial Rules window and modify the search parameters or edit the rule.



Exporting Files

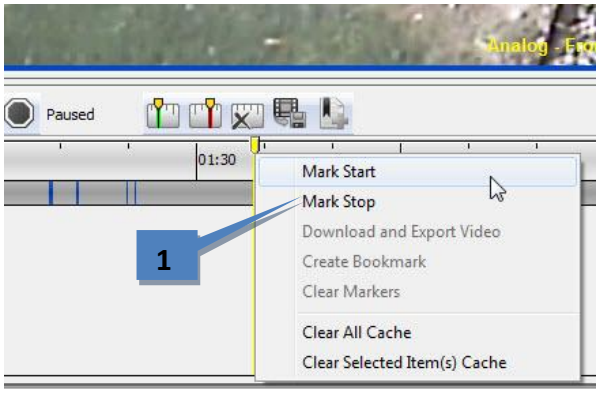
NOTE: For information about the Quick Export button, see the first list in "Search Page Overview."

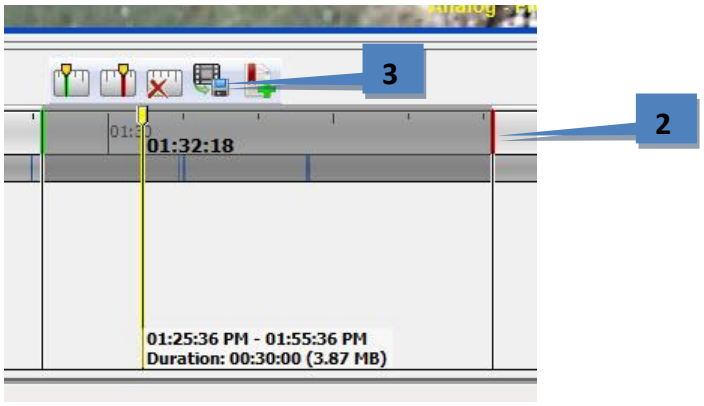
The Export buttons allow you to save a picture or video, print a picture, or save files to a CD or DVD (including DVD+R and DVD+RW). Left to right, the icons are Save Picture, Save Video, Print Picture, and Burn Saved Files to CD or DVD:

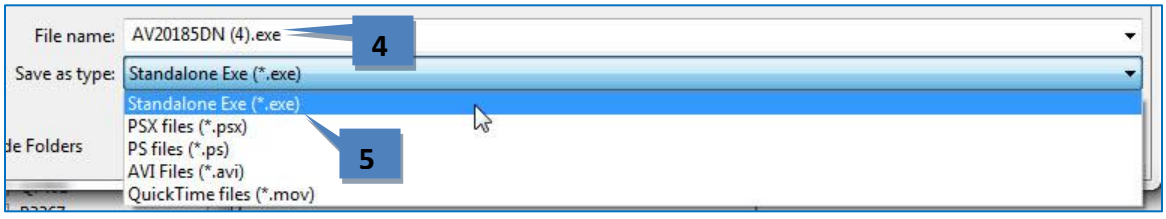
NOTE: You can also copy a picture to a clip board and paste it into a document. When you find the image you need, right-click anywhere in the Video Playback window and select Copy Image to Clipboard. The image will be stored, and you can paste it into another document.

To export video from a single camera, perform a video search and complete the following steps (note that serial data cannot be exported using this process):

1. Locate the start of the video clip. Right-click the timeline (or right-click the video window) and select Mark Start or Mark Stop from the pop-up menu.
2. A default export range is displayed, with the green marker indicating the start of the export clip and a red marker indicating the end of the export clip. You can slide the start and end markers earlier or later as desired.
3. Click the Export Video button.
4. In the Export Video window, select a file name and location.
5. Select a file type.
6. Click Save (not shown).







By default, the export is saved as an *.exe file, which can be launched in its own player and run by a user who does not have access to exacqVision Client. You can also save the clip as a *.psx file, a packaged .ps file that can be run with a simple double-click. The *.avi, or *.mov file formats are also available if you want to email it to another exacqVision Client user. If you are running the client on a Linux or Mac operating system, you should save the clip as a *.psx file unless you are emailing it to a Windows user.

The following chart contains information about file compatibility on each operating system.

Quicktime and AVI File Export Players

	Windows Players			Linux Players		Mac Players
Video format	**WMP***	**Quicktime Player**	**VLC**	**MPlayer**	**VLC**	**Quicktime Player**
AVI MJPEG	•	• with DivX decoder	•	•	•	• with DivX decoder
AVI MPEG4	• with DivX	• with DivX decoder	•	•	•	• with DivX decoder
AVI MPEG4 with ASP	• with DivX	• with DivX decoder	•	•	•	• with DivX decoder
AVI H.264	• with DivX	• with DivX decoder	•	•	•	• with DivX decoder
Quicktime MJPEG		•	•	•	•	•
Quicktime MPEG4		•	•	•	•	•
Quicktime MPEG4 with ASP		• with 3ivx MPEG4 decoder	•	•	•	• with 3ivx MPEG4 decoder
Quicktime H.264		•	•	•	•	•

***WMP = Windows Media Player**

Download players at the following URLs:

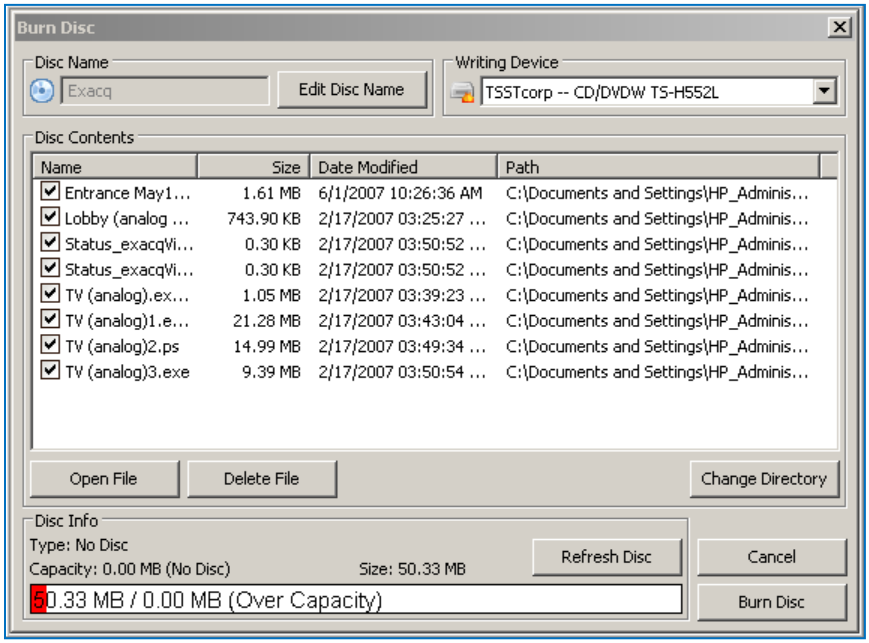
- **Windows Media Player**
  http://www.microsoft.com/windows/windowsmedia/default.mspx
- **Quicktime Player**
  http://www.apple.com/quicktime/download/
- **VLC Player**
  http://www.videolan.org/vlc
- **MPlayer**
  http://www.mplayerhq.hu/design7/dload.html

Download codecs at the following URLs:

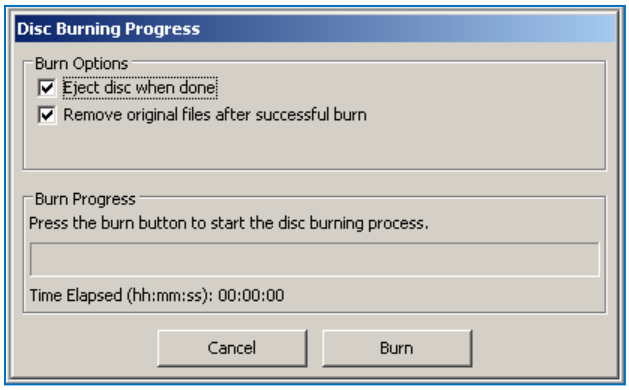
- **3ivx MPEG4 decoder**
  http://store.3ivx.com/3ivxStore/?features=dec&platform=win&license=plus&Go=Go
- **DivX decoder**
  http://www.divx.com/en/downloads
- **Quicktime codec resources**
  http://www.apple.com/quicktime/resources/components.html?os=Windows&ctype=696d6463&csubtype=48323634
- **Perian Codec for Quicktime**
  http://www.perian.org

To save data to a CD or DVD, insert a writable CD or DVD and click the “Save to a CD or DVD” button at the top of the toolbar to display the Burn Disc window.

NOTE: If you do not have a CD burner, the Save to a CD or DVD button will not be enabled. If you are running the client on a Mac, you can drag and drop the files into your Burn Folder to create links to these files and click Burn.


Burn Disc
Disc Name
Exacq
Edit Disc Name
Writing Device
TSSTcorp -- CD/DVDW TS-H552L
Disc Contents
Name
Size
Date Modified
Path
Entrance May1... 1.61 MB 6/1/2007 10:26:36 AM C:\Documents and Settings\HP_Adminis...
Lobby (analog ... 743.90 KB 2/17/2007 03:25:27 ... C:\Documents and Settings\HP_Adminis...
Status_exacqVi... 0.30 KB 2/17/2007 03:50:52 ... C:\Documents and Settings\HP_Adminis...
Status_exacqVi... 0.30 KB 2/17/2007 03:50:52 ... C:\Documents and Settings\HP_Adminis...
TV (analog).ex... 1.05 MB 2/17/2007 03:39:23 ... C:\Documents and Settings\HP_Adminis...
TV (analog)1.e... 21.28 MB 2/17/2007 03:43:04 ... C:\Documents and Settings\HP_Adminis...
TV (analog)2.ps 14.99 MB 2/17/2007 03:49:34 ... C:\Documents and Settings\HP_Adminis...
TV (analog)3.exe 9.39 MB 2/17/2007 03:50:54 ... C:\Documents and Settings\HP_Adminis...
Open File
Delete File
Change Directory
Disc Info
Type: No Disc
Capacity: 0.00 MB (No Disc)
Size: 50.33 MB
Refresh Disc
Cancel
50.33 MB / 0.00 MB (Over Capacity)
Burn Disc

1. You can change the name of the disc by clicking the Edit Disc Name button.
2. The Disc Contents list displays all of the video clips in your directory. Select the clips you want to burn.
3. To review a video clip, select the file and click Open File.
4. The Disc Info box displays important information about your disc capacity. The first number listed (MB) is the amount of space required to burn all of the video clips you have selected. The next number represents the capacity of the disc you have inserted; if you forget to insert a disc, this number is zero. If you insert or replace a disc, click Refresh Disc to update the numbers.
5. Click Burn Disc to open the Disc Burning Progress window. Review the Burn Options before proceeding.
6. Click the Burn button to start the writing process.



A Technical Support

Exacq Technologies is committed to providing exceptional technical and engineering support. When you need help with your exacqVision product, please be ready with a complete description of the problem, including any error messages or instructions on re-creating the error.

Technical support can be contacted as follows:

Exacq Technologies, Inc.
11955 Exit Five Parkway, Bldg 3
Fishers, IN 46037 USA
Phone: +1-317-845-5710
Fax: +1-317-845-5720
e-mail: support@exacq.com
Web: http://www.exacq.com

B Regulatory Notice

Federal Communications Commission (FCC)
Radio Frequency Interference Statement

The Exacq Product contains incidental radio frequency-generating circuitry and, if not installed and used properly, may cause interference to radio and television reception. This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the Federal Communications Commission (FCC) Rules. These limits are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference to radio and television reception, in which case users will be required to correct the interference at their own expense. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, users are encouraged to try to correct the interference by one or more of the following measures: Reorient the television or radio receiving antenna, and/or relocate the Exacq product and the radio or TV with respect to each other. If necessary, users should consult the manufacturer or an experienced radio/television technician for additional suggestions. Users may find helpful the following booklet prepared by the Federal Communications Commission: “How to Identify and Resolve Radio-TV Interference Problems,” which is available from the Government Printing Office, Washington DC, 20402 (stock #004-000-00345-4).

CE Notice

Marking by the CE symbol indicates compliance of this device to the EMC directive of the European Community. Such marking is indicative that this device meets or exceeds the following technical standards:

- EN55022: Conducted Emissions
- EN55022: Radiated Emissions
- 61000-4-2 Electrostatic Discharge
- 61000-4-3 Radiated Immunity
- 61000-4-4 Electrical Fast Transients
- 61000-4-5 Surge Immunity
- 61000-4-6 Conducted Immunity

Electromagnetic compatibility (EMC) requires the use of shielded cable and ferrite cores for all wiring added by the user. Good shielding techniques should be applied in the user’s system.

C Warranty

LIMITED WARRANTY AND LIMITATION OF LIABILITY

LIMITED WARRANTY. Exacq hardware products are warranted against defects in materials and workmanship for three (3) years from the date Exacq ships the products to the Customer. All software products are licensed to the Customer under the terms of the appropriate Exacq Technologies license. For a period of ninety (90) days from the Delivery Date, Exacq software products (when properly installed on Exacq hardware products) (a) will perform substantially in accordance with the accompanying written materials, and (b) the medium on which the software product is recorded will be free from defects in materials and workmanship under normal use and service. Any replacement of a licensed software product will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer. Customer must obtain a Return Material Authorization number from Exacq before returning any products under warranty to Exacq. Customer shall pay expenses for shipment of repaired or replacement products to and from Exacq. After examining and testing a returned product, if Exacq concludes that a returned product is not defective, Customer will be notified, the product returned at Customer's expense, and a charge made for examination and testing. This Limited Warranty is void if products or parts are damaged by (a) improper handling, normal wear and tear, accidents, theft, vandalism, fire, water or other peril; (b) conditions outside the specifications for operation of the products, including but not limited to, electrical power, temperature humidity, dust or lightning; (c) Customer supplied third party software not intended for use with the applicable Exacq software; (d) utilization of an improper hardware or software key; (e) or improper use, negligence, repair, alteration or maintenance of the product not performed by Exacq Technologies, Inc. or its authorized service centers or authorized technicians.

CUSTOMER REMEDIES. Exacq's sole obligation (and Customer's sole remedy) with respect to the foregoing Limited Warranty shall be to, at its option, return the fees paid or repair/replace any defective products, provided that Exacq receives written notice of such defects during the applicable warranty period. Customer may not bring an action to enforce its remedies under the foregoing Limited Warranty more than one (1) year after the accrual of such cause of action.

RETURN/CANCELLATION POLICY. Customer may return unwanted products within thirty (30) days of the Delivery Date. Customer shall pay a twenty percent (20%) restocking charge on any unwanted products returned to Exacq. No returns will be accepted after the thirty (30) day period has expired. Where special equipment or services are involved, Customer shall be responsible for all related work in progress; however, Exacq shall take responsible steps to mitigate damages immediately upon receipt of a written cancellation notice from Customer. A Return Material Authorization number must be obtained from Exacq for return of any products. Exacq may terminate any order if any representations made by Customer to EXACQ are false or misleading.

NO OTHER WARRANTIES. EXCEPT AS EXPRESSLY SET FORTH ABOVE, THE PRODUCTS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, AND NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED ARE MADE WITH RESPECT TO THE PRODUCTS, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NON-INFRINGEMENT OR ANY OTHER WARRANTIES THAT MAY ARISE FROM USAGE OF TRADE OR COURSE OF DEALING. EXACQ DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE OF OR THE RESULTS OF THE USE OF THE PRODUCTS IN TERMS OF CORRECTNESS ACCURACY RELIABILITY OR OTHERWISE AND DOES NOT WARRANT THAT THE OPERATION OF THE PRODUCTS WILL BE UNINTERRUPTED OR ERROR FREE. EXACQ EXPRESSLY DISCLAIMS ANY WARRANTIES NOT STATED HEREIN.

NO LIABILITY FOR CONSEQUENTIAL DAMAGES. The entire liability of Exacq and its licensors, distributors and suppliers (including its and their directors, officers, employees and agents) is set forth above. To the maximum extent permitted by applicable law, in no event shall Exacq and its licensors, distributors and suppliers (including its and their directors, officers, employees and agents) be liable for any damages including but not limited to any special, direct, indirect, incidental, exemplary, or consequential damages, expenses, lost profits, lost savings, business interruption, lost business information, or any other damages arising out of the use or inability to use the products, even if Exacq or its licensors, distributors, and suppliers has been advised of the possibility of such damages. Customer acknowledges that the applicable purchase price or license fee for the products reflects this allocation of risk. Because some states/jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply. If the foregoing limitation of liability is not enforceable because an Exacq product sold or licensed to Customer is determined by a court of competent jurisdiction in a final non appeal able judgment to be defective and to have directly caused bodily injury death or property damage in no event shall Exacq's liability for property damage exceed the greater of $50,000 or fees paid for the specific product that caused such damage

WARNING: IN ANY APPLICATION THE RELIABILITY OF OPERATION OF THE PRODUCTS CAN BE IMPAIRED BY ADVERSE FACTORS, INCLUDING BUT NOT LIMITED TO FLUCTUATIONS IN ELECTRICAL POWER SUPPLY, COMPUTER HARDWARE MALFUNCTIONS, COMPUTER OPERATING SYSTEM SOFTWARE FITNESS, FITNESS OF COMPILERS AND DEVELOPMENT SOFTWARE USED TO DEVELOP AN APPLICATION, INSTALLATION ERRORS, SOFTWARE AND HARDWARE COMPATIBILITY PROBLEMS, MALFUNCTIONS OR FAILURES OF ELECTRONIC MONITORING OR CONTROL DEVICES, TRANSIENT FAILURES OF ELECTRONIC SYSTEMS (HARDWARE AND/OR SOFTWARE), UNANTICIPATED USES OR MISUSES, OR ERRORS ON THE PART OF THE USER OR APPLICATIONS DESIGNER (ADVERSE FACTORS SUCH AS THESE ARE HEREAFTER COLLECTIVELY TERMED "SYSTEM FAILURES"). ANY APPLICATION WHERE A SYSTEM FAILURE WOULD CREATE A RISK OF HARM TO PROPERTY OR PERSONS (INCLUDING THE RISK OF BODILY INJURY AND DEATH) SHOULD NOT BE RELIANT SOLELY UPON ONE FORM OF ELECTRONIC SYSTEM DUE TO THE RISK OF SYSTEM FAILURE. TO AVOID DAMAGE, INJURY, OR DEATH, THE USER OR APPLICATION DESIGNER MUST TAKE REASONABLY PRUDENT STEPS TO PROTECT AGAINST SYSTEM FAILURES, INCLUDING BUT NOT LIMITED TO BACK-UP OR SHUT DOWN MECHANISMS. BECAUSE EACH END-USER SYSTEM IS CUSTOMIZED AND DIFFERS FROM EXACQ'S TESTING PLATFORMS AND BECAUSE A USER OR APPLICATION DESIGNER MAY USE EXACQ PRODUCTS IN COMBINATION WITH OTHER PRODUCTS IN A MANNER NOT EVALUATED OR CONTEMPLATED BY EXACQ THE USER OR APPLICATION DESIGNER IS ULTIMATELY RESPONSIBLE FOR VERIFYING AND VALIDATING THE SUITABILITY OF EXACQ PRODUCTS WHENEVER EXACQ PRODUCTS ARE INCORPORATED IN A SYSTEM OR APPLICATION, INCLUDING, WITHOUT LIMITATION, THE APPROPRIATE DESIGN, PROCESS AND SAFETY LEVEL OF SUCH SYSTEM OR APPLICATION.

D Manual Updates

Following are manual updates since the most recent major revision of the exacqVision Client software:

Release 5.0

- Added Clear Cache option to Video Playback section.
- Updated Layout Panel section with modified Find Camera feature.
- Updated PTZ Configuration and PTZ Control sections with merged PTZ and preset windows.
- Updated System section with the Watchdog Timer tab.

Release 5.2

- Added Views and Tours sections.
- Updated PTZ sections for clarity.
- Updated Add IP Cameras section to include new layout.
- Updated Add Systems section to include new layout and Import/Export buttons.
- Updated System section to include modified System tab and new Hardware Monitoring tab.

Release 5.4

- Updated System section to include Update tab.
- Updated IP Camera Recording and Analog Camera Recording pages to include new layout.
- Update Serial Profile and Serial Port pages to include new layout and columns.
- Updated Client page to include audio/video synchronization option.

Release 5.6

- Updated Notifications section to include new layout and Attach Preview feature.
- Updated Schedule section to include new layout.
- Added deblocking feature to Client section.
- Added Layouts section.

Release 5.8

- Modified Add Systems page to include central server database location feature.
- Modified Notifications section to include new supported tags.

Release 6.0

- Expanded Camera Settings section to include tabbed layout and new features.
- Updated Search Page sections to include new and modified features.
- Added new file format to Exporting Files section.

Release 6.2

- Added Support Diagnostics information to exacqVision Help section
- Added new Rules feature to Serial Profiles and Search Serial sections.
- Modified Serial Ports section to include reorganized interface.

Release 6.4

- Modified Layout Panel section to include additional export options.
- Added Address IP Cameras tab feature to Add IP Cameras section.
- Updated information about soft trigger availability.